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TWENTY-SECOND

ANNUAL REGISTER

1912-13

"The beneficence of the Creator towards man on earth, and the possibilities of humanity, are one and the same."—LELAND STANFORD.

"A generous education is the birthright of every man and woman in America."

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OFFICE DIRECTORY

[The rooms in the Inner Quadrangle are numbered consecutively, beginning at the left of the main entrance, ten numbers being allotted to each building. In the Outer Quadrangle forty numbers are allotted to each of the larger buildings and ten numbers to each one-story building, beginning with the Assembly Hall and number 120. The Engineering buildings south of the Quadrangles begin with the number 500. The Chemistry building is on the west avenue between the Quadrangles and the Museum.]

The office of the PRESIDENT is room 112.
The office of the REGISTRAR is room 116.
The office of the ACADEMIC SECRETARY is room 113.
The office of the APPOINTMENT SECRETARY is room 118.
The office of the MEDICAL ADVISER TO WOMEN is room 94.
The office of the DEAN OF WOMEN is room 203.
The office of the STUDENT ADVISER is room 265.
The office of the TREASURER is room 250.
The office of the COMMITTEE ON PUBLIC HEALTH is room 95.

The various Departmental offices are given in the SCHEDULE and in the DIRECTORY OF OFFICERS AND STUDENTS.

The University Post and Telephone Office is *Stanford University, California.*

The University Railway Station and Telegraph and Express Office is *Palo Alto, California.*

Requests for *Registers,* blanks, and other printed matter, and inquiries regarding terms of admission, advanced standing, etc., should be addressed to THE REGISTRAR, *Stanford University, California.*

UNIVERSITY CALENDAR

1912

Aug.	26-28	Monday-Wednesday	Registration of Students.
Dec.	14-20	Saturday-Friday	End-Semester Examinations.

1913

Jan.	6-7	Monday-Tuesday	Registration for Second Semester.
Jan.	8	Wednesday	Instruction begins.
Jan.	10	Friday	Mid-Year Conferring of Degrees.
March	9	Sunday	Founders' Day.
March	29	Saturday	Mid-Semester Recess.
April	6	Sunday	
May	8-14	Thursday-Wednesday	End-Semester Examinations.
May	14	Wednesday	Birthday of Leland Stanford, Jr.
May	19	Monday	Commencement.
Aug.	25	Monday	Birthday of Jane Lathrop Stanford.
Sept.	1	Monday	Registration of Graduate Students.
Sept.	2	Tuesday	Registration of New Undergraduates.
Sept.	3	Wednesday	Registration of Matriculated Undergraduates.
Sept.	4	Thursday	Instruction begins.
Sept.	12	Friday	Conferring of Degrees.
Nov.	27	Thursday	Thanksgiving Recess.
Nov.	30	Sunday	
Dec.	13-19	Saturday-Friday	End-Semester Examinations.

1914

Jan.	5	Monday	Registration of Graduate Students.
Jan.	6	Tuesday	Registration of Undergraduates.
Jan.	7	Wednesday	Instruction begins.
Jan.	9	Friday	Mid-Year Conferring of Degrees.
Feb.	22	Sunday	Washington's Birthday.
March	9	Monday	Founders' Day.
March	28	Saturday	Mid-Semester Recess.
April	5	Sunday	
May	7-13	Thursday-Wednesday	End-Semester Examinations.
May	14	Thursday	Birthday of Leland Stanford, Jr.
May	17	Sunday	Baccalaureate Sunday.
May	18	Monday	Commencement.

BOARD OF TRUSTEES

[For Directory of Officers and Committees of the Board, consult Index.]

LIFE TRUSTEES	DATE OF APPOINTMENT
HORACE DAVIS	1885
TIMOTHY HOPKINS	1885
JOSEPH DONOHOE GRANT	1891
SAMUEL FRANKLIN LEIB	1891
LEON SLOSS	1891
THOMAS WELTON STANFORD	1893
FRANK MILLER	1893
CHARLES GARDNER LATHROP	1893

ELECTIVE TRUSTEES	TERM EXPIRES
WILLIAM BABCOCK	1915
CHARLES P. EELLS	1915
VANDERLYNN STOW	1916
JAMES LEROY NICKEL	1919
FRANK BARSTOW ANDERSON	1922
HERBERT CLARK HOOVER	1922
WILLIAM MAYO NEWHALL	1922

OFFICERS OF INSTRUCTIONS AND ADMINISTRATION*

DAVID STARR JORDAN, President of the University.

M. S. Cornell, 1872; M. D. Indiana Medical College, 1875; Ph. D. Butler College, 1878; LL. D., Cornell, 1886, Johns Hopkins, 1902, Illinois College, 1903. Instructor in Botany, Cornell, 1871-72; Professor of Natural History, Lombard University, 1872-73; Principal of Appleton (Wis.) Collegiate Institute, 1873-74; Lecturer in Marine Botany at Penikese, 1873-74; Teacher of Natural History, Indianapolis H. S., 1874-75; Professor of Biology, Butler College, 1875-79; Instructor in Botany, Harvard Summer School, Cumberland Gap, 1875-76; Assistant to U. S. Fish Commission, 1877-91; Professor of Zoology, Indiana University, 1879-85; President of Indiana University, 1885-91; President of the California Academy of Sciences, 1896-98, 1901-03, 1908, 1911; U. S. Commissioner in charge of Fur Seal Investigations. 1896-98, of Salmon Investigations, 1904; International Commissioner of Fisheries, 1908-10; President of the American Association for the Advancement of Science, 1909-10; Member of International Commission of Zoological nomenclature from 1904; Chief Director, World Peace Foundation, since 1910. President of Leland Stanford Junior University, since 1891.

JOHN CASPER BRANNER, Vice-President and Professor of Geology.

B. S. Cornell, 1882; Ph. D., Indiana, 1885; LL. D., Arkansas, 1897, Maryville College, 1909. Assistant Geologist, Imperial Geological Survey of Brazil, 1875-78; Special Botanist in South America, 1880-81; Special Agent of the U. S. Department of Agriculture for Investigating Cotton and the Insects affecting it in Brazil, 1882-83; Topographical Geologist of the Geological Survey of Pennsylvania, Anthracite District, 1883-85; Professor of Geology, Indiana University, 1885-91; State Geologist of Arkansas, 1887-92; President, Geological Society of America, 1904; Member California Earthquake Investigation Commission, 1906-07; Special Assistant, Geological Survey of Brazil, 1907-08. At Stanford, since 1891.

OLIVER PEEBLES JENKINS, Professor of Physiology and Histology.

A. B. Moore's Hill College, 1869, A. M., 1872; M. S. Indiana, 1886, Ph. D., 1889; Professor of Natural Science, Moore's Hill College, 1876-82; Professor of Natural Science, Indiana State Normal School, 1883-86; Professor of Biology, De Pauw University, 1886-91. At Stanford, since 1891.

MELVILLE BEST ANDERSON, Professor of English Literature, Emeritus.

A. M., Butler University, 1877; LL. D., Aberdeen, 1906. Professor of Modern Languages, Butler University, 1877-80; Professor of English Literature, Knox College, 1881-86; Professor of Literature and History, Purdue University, 1886-87; Professor of the English Language and Literature, University of Iowa, 1887-91. At Stanford, since 1891.

JOHN MAXSON STILLMAN, Professor of Chemistry.

Ph. B., California, 1874, Ph. D., 1885. Assistant in Chemistry, University of California, 1873-75; Student in Chemistry, Strassburg and Würzburg, 1875-76; Instructor in Organic and General Chemistry, University of California, 1876-82; Chemist of the Boston Sugar Refining Company and Superintendent and Chemist of the American Sugar Refining Company, Boston, 1882-91. At Stanford, since 1891.

*Arranged in groups in the order of seniority of appointment. For alphabetical Directory of Officers, see Index.

FERNANDO SANFORD, Professor of Physics.

B. S., Carthage College, 1879, M. S., 1882. Student, University of Berlin, 1886-88; Professor of Physical Science, Mt. Morris College, 1879-82; Superintendent of Schools, Ogle County, Ill., 1882-86; Instructor in Physics and Chemistry, Englewood (Ill.), High School, 1888-90; Professor of Physical Science, Lake Forest University, 1890-91. At Stanford, since 1891.

CHARLES DAVID MARX, Professor of Civil Engineering.

B. C. E., Cornell, 1878; C. E., Karlsruhe Polytechnicum, 1881. Instructor in Civil Engineering, Karlsruhe Polytechnicum, 1880-81; U. S. Assistant Engineer, Missouri River Improvement, 1882-84; Assistant Professor of Civil Engineering, Cornell University, 1884-90; Professor of Civil Engineering, University of Wisconsin, 1890-91. At Stanford, since 1891.

CHARLES HENRY GILBERT, Professor of Zoology.

B. S., Butler University, 1879; M. S., Indiana, 1882, Ph. D., 1883. Assistant in Natural Sciences and Modern Languages, Indiana University, 1880-84; Professor of Natural History, University of Cincinnati, 1884-89; Professor of Zoology, Indiana University, 1889-91; Assistant to the U. S. Bureau of Fisheries, since 1880; Assistant in charge of scientific exploration of the U. S. S. "Albatross," 1889, 1890, 1902, 1904, 1906. At Stanford, since 1891.

†DOUGLAS HOUGHTON CAMPBELL, Professor of Botany.

Ph. M., Michigan, 1882, Ph. D., 1886. Teacher of Biology, Detroit High School 1882-86; Student at Bonn, Tübingen, and Berlin, 1886-88; Professor of Botany, Indiana University, 1888-91. At Stanford, since 1891.

EWALD FLÜGEL, Professor of English Philology.

Ph. D., Leipzig, 1886. Student, Universities of Freiburg and Leipzig, 1882-88; Privat Docent, University of Leipzig, 1888-92. At Stanford, since 1892.

CHARLES BENJAMIN WING, Professor of Structural Engineering.

C. E. Cornell, 1886. Fellow in Civil Engineering, Cornell University, 1886-87, Instructor, 1887-90, Assistant Professor, 1890-91; Engineer, Pompton (N. J.), Powder Co., 1887, Phoenix Powder Co., Farmingdale, N. Y., 1888; Assistant Engineer, Berlin (Conn.) Iron Bridge Co., 1889-90; Professor of Bridge and Hydraulic Engineering, University of Wsconsin, 1891-92. At Stanford, since 1892.

FRANK ANGELL, Professor of Psychology.

B. S., Vermont, 1878; Ph. D., Leipzig, 1891; L. H. D., Vermont, 1892. Teacher in Washington (D. C.) High School, 1880-87; Assistant Professor of Psychology, Cornell University, 1891-92. At Stanford, since 1892.

LEANDER MILLER HOSKINS, Professor of Applied Mathematics.

B. C. E. and B. S., Wisconsin, 1883, M. S. 1885, C. E. 1887. Instructor in Engineering, University of Wisconsin, 1885-89, Assistant Professor of Mechanics, 1889-91, Professor of Theoretical and Applied Mechanics, 1891-92. At Stanford, since 1892.

†ROBERT EDGAR ALLARDICE, Professor of Mathematics.

A. M., Edinburgh, 1882. Baxter Scholar in Mathematics, University of Edinburgh, 1882-83, Drummond Scholar in Mathematics, 1883-84; Assistant Professor of Mathematics, University of Edinburgh, 1883-92. At Stanford, since 1892.

AUGUSTUS TABER MURRAY, Professor of Greek.

A. B., Haverford, 1885; Ph. D., Johns Hopkins, 1890. Fellow in Johns Hopkins University, 1887-88; Professor of Greek, Earlham College, 1888-90; Student, Universities of Leipzig and Berlin, 1890-91; Professor of Greek, Colorado College, 1891-92. At Stanford, since 1892.

†Absent on leave, 1912-13.

JAMES OWEN GRIFFIN, Professor of German.

Graduate of the Pennsylvania State Normal School, 1873. Teacher in Pennsylvania State Normal School, 1873-74; Principal of Unadilla (N. Y.) Academy, 1874-79; Student, University of Göttingeñ, 1879-80; Principal of Delaware Academy (Delhi, N. Y.), 1880-85; Instructor in German, Cornell University, 1885-91, Registrar, 1890-91. At Stanford, since 1891.

RUFUS LOT GREEN, Professor of Mathematics.

B. S., Indiana, 1885, A. M., 1889. Instructor in Mathematics, Indiana University, 1885-86, Assistant Professor, 1886-88. Associate Professor, 1889-91, Professor of Pure Mathematics, 1891-93; Student, Johns Hopkins University, 1886-87. At Stanford, since 1893.

ARLEY BARTHLOW SHOW, Professor of Mediæval History.

A. B., Doane College, 1882; Graduate, Andover Theological Seminary, 1885; A. M., Doane, 1892. Pastor Congregational Church, Waco, Neb., 1885-87; Professor of History and English Literature, Doane College, 1887-92; Student University of Leipzig, 1900-01; Lecturer on History of the Early Church, Pacific Theological Seminary, Oakland, 1905-07. At Stanford, since 1892.

ORRIN LESLIE ELLIOTT, Registrar.

Ph. B., Cornell, 1885, Ph. D., 1890. Fellow in History and Political Science, Cornell University, 1885-86, Instructor in English, 1886-91, Assistant Registrar and President's Secretary, 1890-91. At Stanford, since 1891.

VERNON LYMAN KELLOGG, Professor of Entomology, and Lecturer in Bionomics.

B. S. Kansas, 1889, M. S., 1892. Student, Cornell University, 1891, University of Leipzig, 1893; Assistant Professor of Entomology, University of Kansas, 1890-93, Associate Professor, 1893-94. At Stanford, since 1894.

JAMES PERRIN SMITH, Professor of Paleontology.

A. B., Wofford College, 1884; A. M., Vanderbilt, 1886; Ph. D., Göttingeñ, 1892. Assistant Geologist and Chemist, Arkansas Geological Survey, 1887-90; Assistant Geologist, U. S. Geological Survey, 1895-1906, Geologist since 1906. At Stanford, since 1892.

LIONEL REMOND LENOX, Professor of Analytical Chemistry.

Ph. B., Columbia, 1888. Assistant Chemist, Bethlehem Iron Co., 1887; Instructor in Chemistry Lehigh University, 1888-91; Chemist, Ordnance Department, U. S. N., Washington, (D. C.), 1891-92. At Stanford, since 1892.

HENRY RUSHTON FAIRCLOUGH, Professor of Latin.

A. B., Toronto, 1883, A. M., 1886; Ph. D., Johns Hopkins, 1896. Fellow in Classics, University College, Toronto, 1883-84; Classical and English Master, Brockville High School, 1884-86; Graduate Scholar, Johns Hopkins University, 1886-87, Fellow, 1887; Lecturer in Greek and Ancient History, University College, Toronto, 1887-93; Professor of Latin, University of Wisconsin, Summer Session, 1906, Columbia University, Summer Session, 1908, University of Chicago, Summer Quarter, 1910; Professor of Latin, American School of Classical Studies, Rome, 1910-11. At Stanford, since 1893.

WILLIAM FREDERICK DURAND, Professor of Mechanical Engineering.

Graduate U. S. Naval Academy, 1880; Ph. D., Lafayette, 1888, Engineer Corps, U. S. Navy, 1880-87; Special Duty as Assistant Professor of Mechanical Engineering, Lafayette College, 1883-85, Worchester Polytechnic Institute, 1887; Professor of Mechanics and Superintendent of Mechanical Department, Michigan State Agricultural and Mechanical College, 1887-91; Professor of Marine Engineering and Principal Graduate School of Naval Architecture and Marine Engineering, Cornell University, 1891-1904. At Stanford, since 1904.

HARRIS JOSEPH RYAN, Professor of Electrical Engineering.

M. E., Cornell, 1887. With Western Engineering Co., Lincoln, Neb., 1887-88; Instructor in Physics, Cornell University, 1888-89, Assistant Professor of

Electrical Engineering, 1889-92, Associate Professor, 1892-95, Professor, 1895-1905; Judge Board of Awards, World"s Fair, Chicago, 1893; U. S. Government Delegate, International Electrical Congress, St. Louis Exposition, 1904. At Stanford, since 1905.

GEORGE HEMPL, Professor of Germanic Philology.

A. B., Michigan, 1879; Ph. D., Jena, 1889; LL. D., Wisconsin, 1904. Principal Saginaw (Mich.), H. S., 1879-82, La Porte (Ind.) H. S., 1882-84; Instructor in German, Johns Hopkins University, 1884-86; Student, Universities of Göttingeñ, Tübingen, Strassburg, Jena, and Berlin, 1886-89; Assistant Professor of English, University of Michigan, 1889-93, Junior Professor 1893-97, Professor of English Philology and General Linguistics, 1897-1906, Professor of English, University of Chicago, Summer Quarter, 1897; President of the American Dialect Society, 1900-05; President of the Modern Language Association, 1902-03; President of the American Philological Association, 1903-04. At Stanford, since 1906.

†EPHRAIM DOUGLASS ADAMS, Professor of History.

A. B., Michigan, 1887, Ph. D., 1890. Principal of High School, McGregor (Ia.), 1887; Principal of High School, Saginaw (Mich.), 1889; Special Agent in Charge of Street Railways, Eleventh Census, Washington (D. C.), 1890; Assistant Professor and afterward Professor of European History, University of Kansas, 1891-1902; Instructor in History, University of Califoria, Summer Session, 1910. At Stanford, since 1902.

‡EDWARD CURTIS FRANKLIN, Professor of Organic Chemistry.

B. S., Kansas, 1888, M. S. 1890; Ph. D., Johns Hopkins, 1894. Chemist to the Palo Alto Plantation and Sugar Factory, Donaldson (La.), 1888; Chemist to the Bella Vista Mining and Milling Co., Los Quemados, Costa Rica, 1897; Instructor in Chemistry, University of Kansas, 1888-90; Student, University of Berlin, 1890-91; Assistant in Chemistry, University of Kansas 1891-93, Associate Professor, 1894-99, Professor of Physical Chemistry, 1899-1903; Member of the U. S. Assay Commission, 1907. At Stanford, since 1903.

ELLWOOD PATTERSON CUBBERLEY, Professor of Education.

A. B., Indiana, 1891; A. M., Columbia, 1902, Ph. D., 1905. Instructor in Science, Ridgeville College (Ind.), 1891; Professor of Physical Science, Vincennes University (Ind.), 1891-93, President, 1893-96; Superintendent of City Schools, San Diego (Cal.), 1896-98; Honorary Fellow, Columbia University, 1901-02, 1904-05; Professor of Education, University of Chicago, Summer Quarter, 1910, Harvard University, second half-year, 1910-11. At Stanford, since 1898.

†ALPHONSO GERALD NEWCOMER, Professor of English.

A. B., Michigan, 1887; A. M., Cornell, 1888. Fellow in Classics, Cornell University, 1887-88; Principal, Mt. Morris (Ill.) H. S., 1888-89; Instructor in Latin and French, Knox College, 1889-91. At Stanford, since 1891.

STEWART WOODFORD YOUNG, Professor of Physical Chemistry.

B. S., Cornell, 1890. Assistant in Chemistry, Cornell University, 1890-91; Instructor in Chemistry, Swarthmore College, 1891-93. At Stanford, since 1893.

FREDERIC CAMPBELL WOODWARD, Professor of Law.

LL. B., Cornell, 1894, LL. M., 1895, A. M., Dickinson College, 1902. Attorney at Law, practicing in New York City, 1895-98; Professor of Law, Dickinson College, 1898-1902; Professor of Law, Northwestern University, 1902-07; Professor of Law, University of Chicago, Summer Quarter, 1908. At Stanford, since 1907.

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†Absent on leave, second semester, 1912-13.
‡Absent on leave, 1912-13.

JOHN CHARLES LOUNSBURY FISH, Professor of Railroad Engineering.

C. E., Cornell, 1892. Instructor in Civil Engineering, Cornell University, 1892-93; Division Engineer, Lake Shore and Michigan Southern Railway, 1906-08. At Stanford, since 1893.

BURT ESTES HOWARD, Professor of Political Science.

A. B., Western Reserve, 1883, A. M., 1886; A. M., Harvard, 1900; Ph. D., Heidelberg, 1903. Student, University of Berlin, 1903-04; Assistant Professor of Political Science, Leland Stanford Junior University, 1900-01, Acting Associate Professor, 1901-02. At Stanford, 1900-02, and since 1908.

ADOLPH BARKAN, Professor of Structure and Diseases of the Eye, Ear, and Larynx, Emeritus.

M. D., University of Vienna, 1866; LL. D., University of Glasgow, 1901. Professor of Ophthalmology and Otology, Medical Department, University of the Pacific, 1872-82, Cooper Medical College, since 1882; Member of the Heidelberg Ophthalmological Society; Member of the Otological Society of Germany; Eye and Ear Surgeon, Lane Hospital, since 1895. At Stanford, since 1909.

JOSEPH OAKLAND HIRSCHFELDER, Professor of Clinical Medicine, Emeritus.

M. D., University of Leipzig, 1876. Professor of Materia Medica, Medical College of the Pacific, 1877-81, Professor of Clinical Medicine, 1881-82; Professor of Clinical Medicine, Cooper Medical College, since 1882; Visiting Physician, City and County Hospital of San Francisco, since 1878; Visiting Physician, Lane Hospital, since 1895. At Stanford, since 1909.

STANLEY STILLMAN, Professor of Surgery.

M. D., Cooper Medical College, 1889. Adjunct Professor of Surgery, Cooper Medical College, 1895-98, Professor of Surgery, since 1898; Assistant Visiting Surgeon, City and County Hospital, San Francisco, 1891-99, Visiting Surgeon, since 1899; Visiting Surgeon, Lane Hospital, since 1895; Fellow of the American Surgical Association. At Stanford, since 1909.

EMMET RIXFORD, Professor of Surgery.

B. S., California, 1887; M. D., Cooper Medical College, 1891. Adjunct Professor of Surgery, Cooper Medical College, 1893-98, Professor, since 1898; Visiting Surgeon, Lane Hospital, 1895, City and County Hospital, San Francisco, since 1899; Fellow, American Surgical Association, 1901; Member Society of Clinical Surgery, 1903. At Stanford, since 1909.

WILLIAM OPHÜLS, Professor of Pathology.

M. D., University of Göttingeñ, 1895. Assistant at the Pathologic Institute at Göttingen, 1896-97; Professor of Pathology and Bacteriology, University of Missouri, 1897-98; Professor of Pathology and Bacteriology, Cooper Medical College, since 1898; Pathologist, Lane Hospital, since 1898. Member of the Association of American Pathologists and Bacteriologists; Member of the Society for Experimental Biology and Medicine. At Stanford, since 1909.

RAY LYMAN WILBUR, Professor of Medicine.

A. B., Stanford, 1896, A. M., 1897; M. D., Cooper Medical College, 1899. Assistant in Physiology, Leland Stanford Junior University, 1894-96, Instructor, 1896-97, Assistant Professor, 1900-03; Lecturer and Demonstrator in Physiology, Cooper Medical College, 1899-1900. At Stanford 1894-97, 1900-03, and since 1909.

ARTHUR WILLIAM MEYER, Professor of Human Anatomy.

B. S., Wisconsin, 1898; M. D., Johns Hopkins, 1905; Assistant and Instructor in Anatomy, Johns Hopkins University, 1905-07; Assistant Professor of Anatomy, University of Minnesota, 1907-08; Professor of Anatomy, Northwestern University, 1908-09. At Stanford, since 1909.

FRANK MACE McFARLAND, Professor of Histology.

Ph. B., De Pauw, 1889; A. M., Stanford, 1893; Ph. D., Würzburg, 1896. Professor of Biology and Geology, Olivet College, 1889-92; Student, Würzburg, Zürich, and Naples, 1894-96. At Stanford, since 1892.

HAROLD HEATH, Professor of Zoology.

A. B., Ohio Wesleyan, 1893; Ph. D., Pennsylvania, 1898. Assistant in Biology, Ohio Wesleyan University, 1891-93; Professor of Biology, University of the Pacific, 1893-94; Harrison Fellow in Zoology, University of Pennsylvania, 1896-98. At Stanford, since 1894.

ARTHUR MARTIN CATHCART, Professor of Law.

A. B., Stanford, 1896. Student, Harvard University, 1896-97; Registered Office Clerk with Attorneys of Colorado Supreme Court, 1900-02; Attorney at Law, Colorado Springs (Colo.), 1903-04; Lecturer in Law, University of California, summer sesion, 1908; Professor of Law, University of Chicago, summer quarter, 1911. At Stanford, since 1904.

WESLEY NEWCOMB HOHFELD, Professor of Law.

A. B., California, 1901; LL. B., Harvard, 1904. Attorney at Law, San Francisco, 1904-05; Instructor, Hastings College of Law, University of California, 1905; Member of Faculty of Law, University of California, Summer Session, 1907; Member of Faculty of Law, University of Chicago, Summer Quarter, 1908, 1910. At Stanford, since 1905.

GUIDO HUGO MARX, Professor of Machine Design.

M. E., Cornell, 1893. With Gleason Tool Co., Rochester (N. Y.), 1893-94; with Bement, Miles & Co., Philadelphia, 1894-95. At Stanford, since 1895.

HENRY WALDGRAVE STUART, Professor of Philosophy.

Ph. B., California, 1893; Ph. D., Chicago, 1900. Teacher, Hollister (Cal.) H. S., 1893-94; Fellow in Political Economy, University of Chicago, 1894-96; Instructor (pro tem) in Economics and Psychology, Washington University, St. Louis, 1896-97; Teacher, Central School, Oakland (Cal.), 1897-98; Principal, Woodland (Cal.) H. S., 1898-99; Fellow in Philosophy, University of Chicago, 1899-1900; Instructor in Economics and History, Ripon College, 1900-01; Instructor in Philosophy, State University of Iowa, 1901-04; Acting Professor of Philosophy, Lake Forest College, 1904-05, Assistant Professor, 1905-07. At Stanford, since 1907.

GEORGE CLINTON PRICE, Professor of Zoology.

B. S., De Pauw, 1890; Ph. D., Stanford, 1897. Student in Biology, Johns Hopkins University, 1890-92; University of Munich, 1895-96. At Stanford, since 1892.

GEORGE JAMES PEIRCE, Professor of Botany and Plant Physiology.

S. B., Harvard, 1890; A. M., and Ph. D., Leipzig, 1894. Assistant in Botany, Harvard University and Radcliffe College, 1890-92; Parker Fellow in Harvard University, studying in Bonn, Leipzig, and Munich, 1892-94; Assistant Professor of Botany, Indiana University, 1895-97; Acting Professor of Botany, University of Wisconsin, second semester, 1910-11. At Stanford, since 1897.

ALBERT CORNELIUS CRAWFORD, Professor of Pharmacology.

M. D., College of Physicians and Surgeons, Baltimore, 1893. Student at Johns Hopkins University, 1887-90, 1891-94, 1903. Assistant in Pharmacology, Johns Hopkins Medical School, 1894-1900; Pharmacologist, Bureau of Plant Industry, United States Department of Agriculture, 1904-08; Physiologist, Bureau of Animal Industry, United States Department of Agriculture, 1908-10. At Stanford, since 1910.

HANS ZINSSER, Professor of Bacteriology.

A. B., Columbia, 1899, M. D., 1903. Roosevelt Hospital, New York, 1903-05, Bacteriologist, 1904; Bacteriologist, St. Luke's Hospital, New York, 1905-10;

Instructor in Bacteriology and Hygiene, Columbia University, 1906-10. At Stanford, since 1910.

ROBERT ECKLES SWAIN, Professor of Physiological Chemistry.

A. B., Stanford, 1899; M. S., Yale, 1901, Ph. D., 1904. Student, Universities of Strassburg and Heidleberg, 1901-02, Yale University, 1909-10. At Stanford, since 1898.

LILLIEN JANE MARTIN, Professor of Psychology.

A. B., Vassar, 1880. Teacher of Science, Indianapolis High School, 1880-89; Vice-Principal and Head of Department of Science, Girls High School, San Francisco, 1889-94; Student, University of Göttingen, 1894-98. At Stanford, since 1899.

†CHARLES ANDREWS HUSTON, Professor of Law.

A. B., Chicago, 1902, J. D., 1907. Fellow in Political Economy, University of Chicago, 1902-03, Assistant in Rhetoric, 1903-04, Associate in Rhetoric, 1904-06. At Stanford, since 1906.

†ALBERT CONSER WHITAKER, Professor of Economics.

A. B., Stanford, 1899; Ph. D., Columbia, 1904. Scholar in Economics, Columbia University, 1899-1900, Fellow, 1900-01; Student, University of Berlin, 1901-02; Lecturer in Economics and Social Science, Columbia University, 1906-07. At Stanford, since 1902.

ALFRED BAKER SPALDING, Professor of Obstetrics and Gynecology.

A. B., Stanford, 1896; M. D., Columbia, 1900. Home Surgeon, General Memorial Hospital, New York, 1900-01; Assistant Resident Physician, Sloane Maternity Hospital, New York, 1901-02; Instructor in Obstetrics, University of California, 1902-05, Assistant Professor, 1905-09, Professor, 1909-12; Student in Special Pathology, Universities of Berlin and Vienna, 1911. At Stanford, since 1912.

MURRAY SHIPLEY WILDMAN, Professor of Economics.

A. B., Earlham, 1893; Ph. D., Chicago, 1904. Professor of History and Economics, Central College (Mo.), 1904-05; Instructor in Economics, University of Missouri, 1905-06, Assistant Professor, 1906-08; Acting Assistant Professor, University of Chicago, Summer Quarter, 1909; Assistant Professor of Economics and Commerce, Northwestern University, 1909-11, Professor, 1911-12. At Stanford, since 1912.

GEORGE THOMAS CLARK, Librarian.

B. S., California, 1886. Assistant Librarian, University of California 1886-87; Deputy State Librarian, California State Library, 1887-90, Classifier, 1890-94; Librarian, San Francisco Public Library, 1894-1907. At Stanford, since 1907.

WILLIAM RANKINE ECKART, Professor of Mechanical Engineering.

M. E., Cornell, 1895. Mechanical Engineer, Siemens Halske Electric Co., Chicago, 1895-96; Construction Engineer, Allison Ranch Mine, Grass Valley (Cal.), 1896-98; Testing work for Frazer & Chalmers, in Hawaii and Mexico, 1898-99; with W. R. Eckart, Consulting Engineer, Hydraulic Power Plants and Mining Work, 1899-1903, summers of 1904-08; Consulting Engineer, Geary St. P. & O. R. R., San Francisco, 1902-06, At Stanford, since 1903.

EDWARD BENJAMIN KREHBIEL, Professor of History.

A. B., Kansas, 1902; Ph. D., Chicago, 1906. Graduate Student, University of Chicago, 1902-06, Fellow, 1903-05, Assistant, 1904-06; Graduate Student, Harvard University, 1904; Student, Ecole de Chartes, Paris, 1905; Instructor, University of Chicago High School, 1905-06; Assistant in History, University of Chicago, 1906-07, Instructor, 1907-09. At Stanford, since 1909.

†Absent on leave, 1912-13.

JOSEPH WALTER BINGHAM, Professor of Law.

A. B., Chicago, 1902, J. D., 1904. In practice of law, Chicago, 1904-05; Acting Assistant Professor of Law, Cornell University, 1905-07. At Stanford, since 1907.

EMLIN McCLAIN, Professor of Law.

Ph. B., State University of Iowa, 1871, A. B., 1872, LL. B., 1873, A. M., 1882, LL. D., 1891; LL. D., Findlay College, 1891. Professor of Law, State University of Iowa, 1881-87, Vice-Chancellor of Law Department, 1887-90, Chancellor, 1890-1900; Judge of the Supreme Court of Iowa, 1901-13.

*WILLIAM HERBERT CARRUTH, Professor of Comparative Literature.

A. B., Kansas, 1880, A. M., 1883; A. M., Harvard, 1889, Ph. D., 1893. Assistant Professor of Modern Languages, University of Kansas, 1882-87, Professor of the German Language and Literature and Vice-President, 1887-1913.

EMILIO PEPE MICHAEL MEINECKE, Acting Professor of Plant Pathology.

Ph. D., Heidelberg, 1893. Assistant in Botany, University of Munich, 1893, University of Heidelberg, 1894; Assistant in Forestry Academy, University of Munich, 1898-92; Professor of Botany, University of La Plata, Argentine Republic, 1907-09; Forest Pathologist, U. S. Department of Agriculture, since 1910.

WILLIAM FITCH CHENEY, Clinical Professor of Medicine.

B. L., California, 1885; M. D., Cooper Medical College, 1889; Post-graduate courses, Johns Hopkins Medical School, 1893; Professor of Principles and Practice of Medicine, Cooper Medical College, since 1898; First Lieutenant, Medical Reserve Corps, U. S. A., 1908. Member of the American Medical Association, and of the National Association for the Study and Prevention of Tuberculosis. At Stanford, since 1909.

WILLIAM FREEMAN SNOW, Clinical Professor of Hygiene and Public Health.

A. B., Stanford, 1896, A. M., 1897; M. D., Cooper Medical College, 1900. Student, Johns Hopkins Medical School, 1901-02; Secretary, California State Board of Health, since 1909. At Stanford, since 1901.

GEORGE BURBANK SOMERS, Clinical Professor of Gynecology.

A. B., Harvard, 1886; M. D., Cooper Medical College, 1888. Chief Surgeon, San Francisco Emergency Hospitals, 1891-95; Adjunct to Chair of Gynecology, Cooper Medical College, 1889, Professor of Gynecology, 1901; Gynecologist to Lane Hospital, since 1900. At Stanford, since 1911.

LANGLEY PORTER, Clinical Professor of Medicine, in charge of Pediatrics.

B. S., Pennsylvania Military College, 1890; M. D., Cooper Medical College, 1896; L. R. C. P., M. R. C. S., England, 1900. House Physician, St. Luke's Hospital, San Francisco, 1897; Senior Dresser, London Hospital, 1900; Resident Physician, St. Mark's Hospital, London, 1901-02; City Physician, in charge of Contagious Diseases, San Francisco, 1903-08; Assistant Professor of Pediatrics, Cooper Medical College, 1908, Associate Professor, 1909-12. At Stanford, since 1912.

RUFUS LEE RIGDON, Clinical Professor of Surgery.

M. D., Cooper Medical College, 1887. Assistant and Instructor in Genito-Urinary Clinic, Cooper Medical College, 1888-98, Associate Professor of Genito-Urinary Surgery and Chief of Genito-Urinary Clinic, 1898-1908, Professor of Genito-Urinary Surgery, 1908-12. At Stanford, since 1912.

*Beginning August, 1913.

ALBERT BROWN McKEE, Clinical Professor of Surgery.

Ph. B., University of the Pacific, 1883, Ph. M., 1886; M. D., Cooper Medical College, 1886. Student in London and Vienna, 1893-96; Instructor and Acting Head of the Eye, Ear, Nose, and Throat Division, University of California Medical Department, 1902-08; Associate Professor of Ophthalmology, Cooper Medical College, 1908-12. At Stanford, since 1912.

†EDWARD CECIL SEWALL, Clinical Professor of Surgery, in charge of Ear, Nose, and Throat Clinic.

A. B., Stanford, 1898; M. D. Cooper Medical College, 1902. Assistant and Instructor in Ophthalmology, Cooper Medical College, 1901-07, Assistant Professor, 1907-09; Student in Freiburg, 1909-10; Associate Professor of Diseases of Eye, Ear, Nose, and Throat, Cooper Medical College, 1910-12. At Stanford, since 1912.

ARTHUR BRIDGMAN CLARK, Associate Professor of Graphic Arts.

B. Ar., Syracuse, 1888, M. Ar., 1891. Director of Trade Schools and Instructor in Drawing, New York State Reformatory, Elmira (N. Y.), 1888-89; Instructor in Architecture, Syracuse University, 1889-92. At Stanford, since 1892.

‡GEORGE ARCHIBALD CLARK, Academic Secretary.

B. L., Minnesota, 1891, A. M., 1911. Secretary, U. S. Fur Seal Commission, 1896-98; Special Investigator, Bureau of Fisheries, Fur Seal Investigation on the Pribilof Islands, 1909, 1912. At Stanford, since 1891.

OLIVER MARTIN JOHNSTON, Associate Professor of Romanic Languages.

A. B., Mississippi College, 1890, A. M., 1892; Ph. D., Johns Hopkins 1896. Principal, Preparatory Department, Mississippi College, 1890-91, Professor of English, 1891-93; Fellow in Johns Hopkins University, 1895-96; Lecturer in French Philology, Bryn Mawr College, 1896-97. At Stanford, since 1897.

DAVID CHARLES GARDNER, Chaplain.

Graduate Church Divinity School of the Pacific, San Mateo, 1897. Curate, St. James Mission, San Francisco, 1898; Rector of All Saints Church, Palo Alto, 1898-1902. At Stanford, since 1902.

HANS FREDERICK BLICHFELDT, Associate Professor of Mathematics.

A. B., Stanford, 1896; Ph. D., Leipzig, 1898. At Stanford, since 1898.

FREDERICK JOHN ROGERS, Associate Professor of Physics.

M. S., Cornell, 1891. Instructor in Physics, Cornell University, 1892-1900. At Stanford, since 1900.

KARL GUSTAV RENDTORFF, Associate Professor of German.

A. M., Stanford, 1894, Ph. D., 1896. Student, University of Giessen, 1884-85, University of Kiel, 1885-91. At Stanford, since 1894.

WILLIAM ALPHA COOPER, Associate Professor of German.

A. B., Marietta, 1892, A. M., 1897. Student, Universities of Bonn, Leipzig, and Paris, 1892-94; Instructor in German and French, Marietta College, 1895-99, Professor, 1899-1901. At Stanford, since 1901.

HALCOTT CADWALADER MORENO, Associate Professor of Applied Mathematics.

A. B., University of Georgia, 1893, A. M., 1894, B. L., 1896; Ph. D., Clark, 1900. Tutor in Mathematics, University of Georgia, 1893-97; Scholar and Fellow in Mathematics, Clark University, 1897-1900; Assistant in Mathematics, Clark University, 1900-01. At Stanford, since 1901.

†Absent on leave. 1912-13.
‡Absent on leave, first semester, 1912-13.

SIDNEY DEAN TOWNLEY, Associate Professor of Applied Mathematics and Astronomy.

B. S., Wisconsin, 1890, M. S., 1892; D. Sc., Michigan, 1897. Fellow in Astronomy, University of Wisconsin, 1890-91, Assistant in Astronomy and Mathematics, 1891-92; Hearst Fellow in Astronomy, University of California (Lick Observatory), 1892-93; Instructor in Astronomy, University of Michigan, 1893-95, 1896-98; Student, Universities of Berlin and Munich, 1895-96; Instructor in Practical Astronomy, University of California, 1898-1903; Lecturer in Astronomy, 1904-07; Astronomer in charge of International Latitude Observatory, 1903-07. At Stanford, since 1907.

COLBERT SEARLES, Associate Professor of Romanic Languages.

A. B., Wesleyan University, 1895; Ph. D., Leipzig, 1899. Instructor in French and Italian, Indiana University, 1899-1900; Associate Professor of English and Modern Languages, University of Arkansas, 1900-01. At Stanford, since 1901.

JEFFERSON ELMORE, Associate Professor of Latin.

A. B., Stanford, 1895, A. M., 1895, Ph. D., 1901. Principal of Merced County High School, 1895-97; Student, Universities of Bonn and Berlin, 1901-02. At Stanford, since 1898.

AUSTIN FLINT ROGERS, Associate Professor of Mineralogy and Petrography.

A. B., Kansas, 1899, A. M., 1900; Ph. D., Columbia, 1902. Assistant in Mineralogy, University of Kansas, 1898-1900; Assistant Geologist, University Geological Survey of Kansas, 1898-1900, 1903; Fellow in Mineralogy, Columbia University, 1900-02, Tutor in Mineralogy, 1902-05. At Stanford, since 1905.

JOHN OTTERBEIN SNYDER, Associate Professor of Zoology.

A. B., Stanford, 1897, A. M., 1899. Assistant U. S. Fish Commission, 1897 1899, 1904; Naturalist on U. S. S. Albatross engaged in deep sea investigations, 1902, 1906. At Stanford, since 1897.

CLARA S. STOLTENBERG, Associate Professor of Physiology.

A. B., Stanford, 1896, A. M., 1897. At Stanford, since 1896.

LEROY ABRAMS, Associate Professor of Botany, and Curator of the Dudley Herbarium.

A. B., Stanford, 1899, A. M., 1902; Ph. D., Columbia, 1910. Acting Professor of Botany, University of Idaho, 1899-1900; Assistant in Botany, Stanford, 1900-02, Instructor, 1902-04; Fellow in Botany, Columbia University, 1904-05; Assistant Curator, Division of Plants, United States National Museum, 1905-06. At Stanford, 1900-04, and since 1906.

PERCY ERWIN DAVIDSON, Associate Professor of Education.

A. B., Stanford, 1898; A. M., Harvard, 1905. Teacher, Grammar and High Schools, San Diego (Cal.), 1898-1900; Supervisor of History and English Teaching, San Francisco State Normal School, 1900-03; Assistant in Education, San Diego State Normal, 1903-04; Graduate Student, Teachers' College, Columbia University, 1905-07; Instructor in Logic and History of Education, New York Training School for Teachers, 1906-07. At Stanford, since 1907.

RUFUS CLARENCE BENTLEY, Associate Professor of Education.

A. B., Nebraska, 1894, A. M., 1896. Assistant in Psychology, University of Nebraska, 1893-96; Principal of Schools, Shelton (Neb.), 1896-97; Principal of High School, Martinez (Cal.), 1897-98; Principal of High School and Supervising Principal of Schools, San Rafael (Cal.), 1898-1900; Fellow, Columbia University, 1900-01; Fellow, Clark University, 1901-03; Dean of Clark College, 1902-09, Professor of Latin, 1902-04, Professor of Pedagogy, 1904-09. At Stanford, since 1910.

1892-93, Reader, 1893-94, Associate, 1894-96, Instructor, 1896-1900, Assistant Professor, 1900-06. At Stanford, 1906-09.

ALBERT CONSER WHITAKER, Associate Professor of Economics.

A. B., Leland Stanford Jr. University, 1899; Ph. D., Columbia University, 1904. Scholar in Economics, Columbia University, 1899-1900. Fellow, 1900-01; Student, University of Berlin, 1901-02; Lecturer in Economics and Social Science, Columbia University, 1906-07. At Stanford, since 1902.

†ROBERT ECKLES SWAIN, Associate Professor of Chemistry.

A. B., Leland Stanford Jr. University, 1899; M. S., Yale University, 1901, Ph. D., 1904. Student, Universities of Strassburg and Heidelberg, 1901-02. At Stanford, since 1898.

GEORGE THOMAS CLARK, Librarian.

B. S., University of California, 1886. Assistant Librarian, University of California, 1886-87; Deputy State Librarian, California State Library, 1887-90, Classifier, 1890-94; Librarian, San Francisco Public Library, 1894-1907. At Stanford, since 1907.

FREDERICK JOHN ROGERS, Associate Professor of Physics.

M. S., Cornell University, 1891. Instructor in Physics, Cornell University, 1892-1900. At Stanford, since 1900.

KARL G. RENDTORFF, Associate Professor of German.

A. M., Leland Stanford Jr. University, 1894, Ph. D., 1896. Student, University of Giessen, 1884-85, University of Kiel, 1885-91. At Stanford, since 1894.

LILLIEN JANE MARTIN, Associate Professor of Psychology.

A. B., Vassar College, 1880. Teacher of Science, Indianapolis High School, 1880-89; Vice-Principal and Head of Department of Science, Girls' High School, San Francisco, 1889-94; Student, University of Göttingen, 1894-98. At Stanford, since 1899.

RAYMOND MACDONALD ALDEN, Associate Professor of English Literature and Rhetoric.

A. B., University of Pennsylvania, 1894; A. M., Harvard University, 1896; Ph. D., University of Pennsylvania, 1898. Instructor in English, Columbia University, Washington (D. C.), 1894-95; Assistant in English, Harvard University, 1896-97; Senior Fellow in English, University of Pennsylvania, 1898-99, Instructor, 1899-1901. At Stanford, since 1901.

WILLIAM ALPHA COOPER, Associate Professor of German.

A. B., Marietta College, 1892, A. M., 1897. Student, Universities of Bonn, Leipzig, and Paris, 1892-94; Instructor in German and French, Marietta College, 1895-99, Professor, 1899-1901. At Stanford, since 1901.

†WILLIAM RANKINE ECKART, Associate Professor of Mechanical Engineering.

M. E., Cornell University, 1895. Mechanical Engineer, Siemens Halske Electric Co., Chicago, 1895-96; Construction Engineer, Allison Ranch Mine, Grass Valley (Cal.), 1896-98; Testing Work for Fraser & Chalmers, in Hawaii and Mexico, 1898-99; with W. R. Eckart, Consulting Engineer, Hydraulic Power Plants and Mining Work, 1899-1903, summers of 1904-08; Consulting Engineer, Geary St. P. & O. R. R., San Francisco, 1902-06. At Stanford, since 1904.

HALCOTT CADWALADER MORENO, Associate Professor of Applied Mathematics.

A. B., University of Georgia, 1893, A. M., 1894, B. L., 1896; Ph. D., Clark University, 1900. Tutor in Mathematics, University of Georgia, 1893-97; Scholar and Fellow in Mathematics, Clark University, 1897-1900; Assistant in Mathematics, Clark University, 1900-01. At Stanford, since 1901.

†Absent on leave, 1909-10.

†LEE EMERSON BASSETT, Associate Professor of English.

A. B., Stanford, 1901. Graduate, Cumnock School of Oratory, Los Angeles, 1898; Instructor in Public Speaking, University of Southern California 1898-99; Student, School of Expression, Boston, 1901; Student, Department of Literature, University of Chicago, summer 1904; Student of Oxford, 1907-08. At Stanford, since 1901.

HARRY EVERETT ALDERSON, Associate Clinical Professor of Medicine.

M. D., California, 1900. Interne and Resident Physician, Southern Pacific Hospital, 1900-02; Student, Johns Hopkins and Columbia Universities, 1906; Assistant in Skin Diseases, Medical Department of University of California, 1906-12; Professor of Art Anatomy, California School of Design, 1906-12; Chief of Dermatological Clinic, San Francisco Fruit and Flower Mission. At Stanford, since 1912.

HAROLD PHILLIPPS HILL, Associate Clinical Professor of Medicine.

A. B., Stanford, 1898; M. D., University of California, 1901. Assistant in Physiology, Department of Medicine, University of California, 1899-1901, Instructor, 1901-03; Assistant Visiting Physician, St. Luke's Hospital, 1903-06, Visiting Physician, since 1906. At Stanford, since 1912.

JAMES ROLLIN SLONAKER, Assistant Professor of Physiology.

B. S., Wisconsin, 1893; Ph. D., Clark, 1896. Fellow in Biology, Clark University, 1893-96; United States Fish Commission, Woods Holl (Mass.), summer, 1895; Instructor in Zoology, Indiana University, 1896-99, Indiana University Biological Station, 1896-1900; Assistant Professor of Zoology, Indiana University, 1899-1901; Research Assistant in Neurology, University of Chicago, 1901-02, Associate in Neurology, 1902-03. At Stanford, since 1903.

SAMUEL SWAYZE SEWARD, Jr., Assistant Professor of English.

A. B., Columbia, 1896, A. M., 1897. Scholar in Literature, Columbia University, 1896-97; Assistant in Literature, 1897-99; Student Oxford University, 1899-1900; Acting Professor of English, University of Nevada, 1907; Assistant Professor of English, University of California, Summer Session, 1907, University of Oregon, Summer Session, 1908. At Stanford, since 1900.

HOWARD JUDSON HALL, Assistant Professor of English.

B. S. Michigan State Agricultural College, 1890; A. B., Stanford, 1896; A. M., Harvard, 1900. Professor of English and Librarian, University of Arizona, 1891-1904. At Stanford, since 1904.

ELMER REGINALD DREW, Assistant Professor of Physics.

B. S., California, 1888; Ph. D., Cornell, 1903. Student, University of Chicago, 1897-98, University of Berlin, 1903-05; Assistant in Physics, University of California, 1889-92, Instructor, 1892-1902. At Stanford, since 1905.

HENRY DAVID GRAY, Assistant Professor of English.

Ph. B., Colgate, 1897; A. M., Columbia, 1898, Ph. D., 1904. Assistant in German and French, Colgate Academy, 1896-97; University Scholar, Columbia University, 1898-1900; Instructor in Dramatic Literature, American Academy of Dramatic Arts, 1900-02; Instructor in English, University of Texas, 1902-05; Lecturer in English, Columbia University, Summer Session, 1905. At Stanford, since 1905.

†WILLIAM DINSMORE BRIGGS, Assistant Professor of English.

A. B., Stanford, 1896; A. M., Harvard, 1899, Ph. D., 1900. Student Johns Hopkins University, 1896-97; Instructor in English and German, University of Vermont, 1910-11; Instructor in English, Western Reserve University, 1901-06. At Stanford, since 1906.

†Absent on leave, 1912-13.

JOHN EZRA McDOWELL, Assistant Registrar.

A. B., Stanford, 1900. At Stanford, since 1900.

CLIFFORD GILMORE ALLEN, Assistant Professor of Romanic Languages.

A. B., Boston, 1900; A. M., Stanford, 1903; Docteur de l'Université de Paris, 1906. Student, University of Paris, 1903-04; Fellow of Boston University and Student of Universities of Paris and Madrid, 1904-05. At Stanford, since 1901.

WILLIAM ALBERT MANNING, Assistant Professor of Mathematics.

A. B., Willamette University, 1900; A. M., Stanford, 1902, Ph. D., 1904. Acting Assistant Professor of Mathematics, University of Illinois, 1909-10. At Stanford, since 1900.

JOSEPH GRANT BROWN, Assistant Professor of Physics.

A. B., Stanford, 1901, A. M., 1903. Graduate, Illinois State Normal University, 1894, Instructor in Physics and Chemistry, 1894-98. At Stanford, since 1900.

ALBERT LÉON GUÉRARD, Assistant Professor of French.

B. A., Paris, 1898; Agrégé de l'Université de France, 1906. Travelling Scholarship in England, 1901-03; Junior Professor of French Literature and Examiner in History, State Normal School, Paris, 1904-06; Instructor in the Romanic Languages, Williams College, 1906-07. At Stanford, since 1907.

EVELYN WIGHT ALLAN, Dean of Women.

B. S., St. Lawrence University, 1891; A. B., Stanford, 1896. Teacher in Montclair (N. J.), High School, 1892-95; Teacher of English, Jersey City High School, 1897-99; Graduate Student at Columbia University, 1907; Teacher of English, Manual Training High School, Brooklyn (N. Y.), 1899-1908. At Stanford, since 1908.

EDWIN CHAPIN STARKS, Assistant Professor of Zoology.

Assistant in United States Bureau of Biological Survey, 1897-99; Curator of the Museum and Assistant Professor of Zoology, University of Washington, 1899-1900. At Stanford, since 1900.

*SAMUEL BARCLAY CHARTERS, JR., Assistant Professor of Electrical Engineering.

M. E., Cornell, 1904. Delegate International Electrical Congress, St. Louis Exposition, 1904; with Westinghouse Electric & Mfg. Company, Pittsburgh (Pa.), 1904-05. At Stanford, since 1905.

EVERETT PARKER LESLEY, Assistant Professor of Mechanical Engineering.

A. B., Stanford, 1897; M. M. E., Cornell, 1905. Apprentice and Foreman in Union Iron Works, San Francisco, 1897-1903. Assistant Inspector to Naval Constructor, 1903-04; Draftsman at U. S. Experimental Model Basin, Washington (D. C.), 1905-07. At Stanford, since 1907.

ROBERT BARTHOLOW HARSHE, Assistant Professor of Graphic Art.

B. L., Missouri, 1899. Graduate Student, University of Missouri, 1899-1901; Student, Chicago Art Institute, 1901-02; Supervisor Manual Arts, Columbus (Ga.), 1902; Instructor, Summer School of the South, 1903; Manual Training Scholar, Teachers' College, Columbia University, 1903-04; Scholar, Ipswich Summer School, 1904, Art Students' League, 1904-05; Instructor, University of Missouri, 1905-06; Instructor, New York School of Industrial Art, 1906-07; Director, Nantucket Summer School of Design, 1907; Instructor, University of California Summer Session, 1910. At Stanford, since 1907.

*Died December 28, 1912, while absent on leave.

GEORGE HOLLAND SABINE, Assistant Professor of Philosophy.

A. B., Cornell, 1903, Ph. D., 1906. Sage Fellow in Philosophy, Cornell University, 1905-06, Assistant in Philosophy, 1906-07; Acting Assistant Professor of Logic and Metaphysics, Cornell University, 1910-11. At Stanford, since 1907.

MARY ISABEL McCRACKEN, Assistant Professor of Bionomics.

A. B., Stanford, 1904, A. M., 1905. Ph. D., 1908. At Stanford, since 1904.

RENNIE WILBUR DOANE, Assistant Professor of Entomology.

A. B., Stanford, 1896. Assistant in Zoology and Botany, Washington State College, 1896-99; Assistant Professor of Zoology and Entomology, 1899-1901; Superintendent Fisheries Experiment Station, Keyport (Wn.), 1901-03. At Stanford, since 1905.

WALTER KENRICK FISHER, Assistant Professor of Zoology.

A. B., Stanford, 1901, A. M., 1903, Ph. D., 1906. Assistant U. S. Biological Survey, 1897-1901, 1903; Assistant U. S. Fish Commission, 1902. At Stanford, since 1902.

JOHN PEARCE MITCHELL, Assistant Professor of Chemistry.

A. B., Stanford, 1903, A. M., 1904, Ph. D., 1909. Student, University of Leipzig, 1904-05. At Stanford, 1903-04, and since 1905.

LEONAS LANCELOT BURLINGAME, Assistant Professor of Botany.

Ph. B., Ohio Northern University, 1901; A. B., Chicago, 1906, Ph. D., 1908. Instructor in Biology, Ohio Northern University, 1901-04; Fellow in Botany, University of Chicago, 1906, Assistant, 1906-08. At Stanford, since 1908.

ROYCE REED LONG, Director of Physical Training.

A. B., Stanford, 1908. Physical Director, Young Men's Christian Association, Dixon (Ill.), 1897-98, Aurora (Ill.), 1889-1900; Assistant in Encina Gymnasium, 1902-04; Director of Vanderbilt University Gymnasium, 1904-06. At Stanford, since 1906.

ERNEST WILLIAM PONZER, Assistant Professor of Applied Mathematics.

B. S., Illinois, 1900, M. S., 1903. Instructor in Mathematics, University of Illinois, 1900-09. At Stanford, since 1909.

FRANK ELLSWORTH BLAISDELL, Assistant Professor of Applied Anatomy.

M. D., Cooper Medical College, 1889. Demonstrator of Anatomy, Cooper Medical College, 1903, Instructor in Biology and Embryology, 1900-09, in Histology, 1907-09, Assistant Professor of Anatomy, 1904-05, Associate Professor, since 1907. At Stanford, since 1910.

ERNEST CHARLES DICKSON, Assistant Professor of Pathology.

A. B., Toronto, 1904, M. B., 1906. Assistant Demonstrator in Physiology, including Physiological Chemistry and Pharmacology, University of Toronto, 1904-05, George Brown Research Scholar, 1906-07; Interne, Toronto General Hospital, 1907, Assistant Demonstrator in Pathology, in charge of Clinical Laboratory, 1907; Assistant Resident Physician, Johns Hopkins Hospital, 1907-08; Instructor in Pathology and Bacteriology, Cooper Medical College, since 1908. At Stanford, since January, 1911.

AURELIO MACEDONIO ESPINOSA, Assistant Professor of Spanish.

A. B., Colorado, 1902, A. M., 1904; Ph. D., Chicago, 1909. Assistant in Romance Languages, University of Colorado, 1901-02; Instructor in Spanish, Summer Term, 1904, 1905; Professor of Romance Languages, University of New Mexico, 1902-10; Fellow in Romance Languages and Instructor in Spanish, University of Chicago, 1908-09; Membre fondateur et callabrateur special de

la Société International de Dialectologie Romane, 1909; Membro correspondiente de la Sociedad de Folklore chileno, 1910. At Stanford, since 1910.

†BRUNO BOEZINGER, Assistant Professor of German.

A. B., Fort Worth University, 1894, A. M., 1895; Ph. D., Stanford, 1910. Instructor in German, North Texas Normal School, 1895-98; Principal, German Department, San Antonio (Texas) H. S., 1899-1906; Instructor in German, Summer School, University of Texas, 1896. At Stanford, since 1906.

EDGAR EUGENE ROBINSON, Assistant Professor of History.

A. B., Wisconsin, 1908, A. M., 1910. Assistant in History, University of Wisconsin, 1908-09, Fellow in American History, 1909-10; Assistant Professor of History, Carleton College, 1910-11. At Stanford, since 1911.

CLELIA DUEL MOSHER, Director of Roble Gymnasium.

A. B., Stanford, 1893, A. M., 1894; M. D., Johns Hopkins, 1900. Assistant in Hygiene and Physical Training, Stanford, 1893-94, Instructor, 1894-96; Externe in the Johns Hopkins Hospital Dispensary, and Gynecological Assistant in Dr. Kelly's Sanatorium, Baltimore (Md.), 1900-01; Physician, Palo Alto, 1901-10. At Stanford, 1893-96, and since 1910.

THOMAS ADDIS, Assistant Professor of Medicine.

M. B. Ch. B., Edinburgh, 1905, M. D. and M. R. C. P., 1908. Clinical Assistant Medical Out Patient Department, Royal Infirmary of Edinburgh, 1908, 1911; Medical Registrar, Leith Hospital, 1911; Carnegie Research Scholar and Fellow, 1908-11; Member of the Royal Medical Society; Member of the Pathological Club, Edinburgh; Director of the Clinical Laboratory, Lane Hospital, since 1911. At Stanford, since 1911.

CHARLES NORMAN CROSS, Assistant Professor of Mechanical Engineering.

M. E., Cornell, 1906. Assistant Engineer, Long Island State Hospital, Brooklyn (N. Y.), 1905; Dynamo and Switchboard Attendant with the New York Edison Co., New York City, 1905-06; Electrician with the Lackawanna Steel Co., Buffalo (N. Y.), 1906. At Stanford, since 1906.

IRA BROWN CROSS, Assistant Professor of Economics.

A. B., Wisconsin, 1905, A. M., 1906; Ph. D., Stanford, 1909. University Scholar in Economics, University of Wisconsin, 1905-06; Special Agent for Wisconsin Tax Commission, 1904-06; Special Agent for U. S. Immigration Commission, 1908-09. At Stanford, since 1906.

†JOHN HARRISON FOSS, Assistant Professor of Civil Engineering.

A. B., Stanford, 1903. Assistant Engineer, Hamakua Ditch, Huelo, Maui (Hawaiian Islands). 1903-04, Engineer, 1904-05; Engineer, Maui Agricultural Co., Paia, Maui, 1905-07. At Stanford, since 1907.

HERMANN JOHANN HILMER, Assistant Professor of German.

A. B., Michigan, 1904; A. M., Columbia, 1905; Ph. D., Stanford, 1912. Assistant in German, University of Wisconsin, 1905-06; Student, University of Leipzig, 1906-07. At Stanford, since 1907.

JESSE BRUNDAGE SEARS, Assistant Professor of Education.

A. B., Stanford, 1909. Instructor in Education, University of Wisconsin, 1909-10; Student, Teachers' College, Columbia University, 1910-11. At Stanford, since 1911.

EVERETT WALLACE SMITH, Assistant Professor of English.

A. B., Stanford, 1899. At Stanford, since 1910.

PERCY ALVIN MARTIN, Assistant Professor of European History.

A. B., Stanford, 1902. A. M., 1903; A. M., Harvard, 1907, Ph. D., 1912. Student, University of Paris, 1903-04, Universities of Berlin and Leipzig, 1907-08; Fellow, Harvard University, 1908; Professor of History and French, Whittier College, 1904-05. At Stanford, since 1908.

† Absent on leave, 1912-13.

MARION RICE KIRKWOOD, Assistant Professor of Law.
A. B., Stanford, 1909, J. D., 1911. Student, Harvard Law School, 1909-10; Assistant Professor of Law, University of Oklahoma, 1911-12. At Stanford, since 1912.

JAMES CAMERON CLARK, Assistant Professor of Electrical Engineering.
B. S., Iowa State College, 1907; M. M. E., Harvard, 1912, Engineering Apprentice Course, Westinghouse Electric & Manufacturing Company, 1907-09; Instructor in Electrical Engineering, Care School of Applied U. S. Science, 1909-11; Engineer on Electrolysis Surveys, U. S. Bureau of Standards, Washington (D. C.), Summer, 1911.

HARRINGTON BIDWELL GRAHAM, Assistant Clinical Professor of Surgery.
B. S., California, 1896, M. D., 1899. Superintendent of Waldeck Sanitarium, 1899; Student, Johns Hopkins University, 1901, Vienna, 1901-02; Assistant in Surgery, San Francisco Polyclinic, 1904; Student, Vienna and Berlin, 1908-10; Assistant, Ear, Nose, and Throat Clinic, Cooper Medical College, 1910-11.

RICHARD G. BRODRICK, Assistant Clinical Professor of Hygiene and Public Health.
M. D., Cooper Medical College, 1892. Assistant Surgeon, U. S. Navy, 1893, Naval Medical School, New York, 1893-94, Asiatic Station, 1894-98; Past Assistant Surgeon, U. S. Navy, 1896; retired from active duty, 1899; Student, Vienna, 1899-1902; Health Officer, San Francisco, 1908-10, 1912; Executive Secretary, San Francisco Association for the Study and Prevention of Tuberculosis, 1910-11.

SUSAN BROWN BRISTOL, Appointment Secretary.
A. B., Stanford, 1897. At Stanford, since 1900.

EDWARD JOHN STANLEY, Instructor in Pattern Making.
Machinist with Pacific Iron Works, San Francisco, 1879, Blacksmith, 1880, Draftsman, 1881, Pattern Maker, 1883-86; Third Assistant Engineer, Steamer Alabama, 1882; Foreman Pattern Maker, Union Iron Works, San Francisco, 1886-1901, 1906. At Stanford, since 1901.

JAMES BENNETT LIGGETT, Instructor in Foundry Practice.
Apprentice and Foundry Moulder, Falls Rivet and Machine Co., Cuyahoga Falls (Ohio), 1883-88, Webster, Camp & Lane, Akron (Ohio), 1888-93, Bowler & Co., Cleveland (Ohio), 1893-98, Cleveland Steel Casting Co., 1898-99; Foreman, Born Steel Range Co., Cleveland (Ohio), 1899-1902, Westinghouse Electric Co., Cleveland (Ohio), 1902. At Stanford, since 1902.

CHLOE LESLEY STARKS, Instructor in Graphic Art.
At Stanford, since 1899.

THERON J. PALMATEER, Instructor in Machine Shop Practice.
Apprentice with Sibley & Ware, South Bend (Ind.); Journeyman Machinist, 1896-1905, with R. Hoe & Co., New York, Columbus Machine Works, Columbus, O., Elems Engineering Works, Chicago, Western Gas Engine Works, Mishawaka, Ind., Webster Iron Works, Bakersfield, Cal., R. S. Hunkins, San Jose, Cal. At Stanford, since 1904.

LAWRENCE EDMINSTER CUTTER, Instructor in Mechanical Engineering.
A. B., Stanford, 1906. Machinist Apprentice and Journeyman, Union Iron Works, San Francisco, 1895-99, 1899-1902, 1903, 1904, Draftsman, 1905, 1906. At Stanford, since 1906.

WILLIAM HENRY SLOAN, Instructor in Chemistry.
A. B., Stanford, 1903, A. M., 1904. Student, University of Leipzig, 1904-05; Assistant Chemist, San Francisco Board of Health, 1905-06. At Stanford, 1903-04, and since 1906.

THERESA PEET RUSSELL, Instructor in English.

Ph. B., Iowa, 1895. Teacher in Denison Normal School, 1895-96; Principal, Vilisca High School, 1896-98; Graduate Student at Radcliffe College, 1898-99; Teacher in Anamosa High School, 1899-1900. At Stanford, since 1905.

ROBERT HENRY HARCOURT, Instructor in Forge Practice.

Blacksmith with Risdon Iron Works, San Francisco, 1898-1901, 1903-04; with Hammond Car and Elevator Company, San Francisco, 1901-02, 1904-05; with National Iron Works, San Francisco, 1902-03; with Abner Doble Steel Company, San Francisco, 1905-06, Foreman of Forge Shop, 1906-07. At Stanford, since 1907.

CHARLES MOSER, Instructor in Civil Engineering.

C. E., Ohio Northern University, 1902; A. B., Stanford, 1908. At Stanford, since 1908.

†PHILIP ARNOLD KNOWLTON, Instructor in Latin.

A. B., Wisconsin, 1906, A. M., 1908. Graduate Scholar in Greek, University of Wisconsin, 1906-07, in Philosophy, 1907-08; Teacher of Latin and English, Chico (Cal.), H. S., 1908-09. At Stanford, since 1909.

PERLEY ASON ROSS, Instructor in Physics.

A. B., Stanford, 1908, A. M., 1910, Ph. D., 1911. At Stanford, since 1908.

EDITH RONALD MIRRIELEES, Instructor in English.

A. B., Stanford, 1907. At Stanford, snce 1909.

†FRANK WALTER WEYMOUTH, Instructor in Physiology.

A. B., Stanford, 1909, A. M., 1911. At Stanford, since 1910.

GEORGE SHAMBAUGH BOHART, Instructor in Chemistry.

A. B., Stanford, 1911, A. M., 1912. At Stanford, since 1911.

HARRY JOHNSON SEARS, Instructor in Chemistry.

A. B., Stanford, 1911, A. M., 1912. At Stanford, since 1911.

ROBERT EDOUARD PELLISSIER, Instructor in Romanic Languages.

B. S., Harvard, 1904, A. M., 1909. Shattuck Scholar in Romance Languages, Harvard University, 1910-11. At Stanford, 1909-10, and since 1911.

AXEL NIELSEN, Instructor in Electrical Engineering.

Graduate Darmstadt Technische Hochschule, 1906. With Testing Department, Westinghouse Newark Works, 1907; with Operating Department, Niagara, Lockport and Ontario Power Co., 1907-09; with Engineering Department, Westinghouse Electric Co., East Pittsburg, 1909-11. At Stanford, since 1911.

VAN WYCK BROOKS, Instructor in English.

A. B., Harvard, 1907. At Stanford, since 1911.

JAMES EAVES, Instructor in Surgery.

M. B. Ch. B., Edinburgh, 1909. At Stanford, since 1911.

HAYES WILSON YOUNG, Instructor in Metallurgy.

A. B., Stanford, 1911, Engineer, 1912. At Stanford, since 1911.

†JAMES IRA WILSON McMURPHY, Instructor in Systematic Botany.

A. B., Stanford, 1908, A. M., 1909. At Stanford, since 1908.

DONALD FREDERICK GRASS, Instructor in Economics.

Ph. B., Grinnell, 1894; A. B., Harvard, 1898, A. M., 1899. Instructor in History and Economics, Council Bluffs (Ia.), High School, 1894-97, 1906-08; Professor of History and Economics, Tabor College, 1908-10. At Stanford, since 1910.

† Absent on leave, 1912-13.

KARL LUDWIG SCHAUPP, Student Adviser.

MAUDE CLEVELAND, Instructor in Physical Training.
B. L., California, 1909. Assistant Dean of Women, University of California, 1909-10; Superintendent of Playgrounds, San Diego, 1910. At Stanford, since 1911.

EDGAR DAVIDSON CONGDON, Instructor in Anatomy.
A. B., Syracuse, 1901, A. M., 1902; Ph. D., Harvard, 1909. Austin Teaching Fellow in Zoology, Harvard University, 1906-09; Hooper Traveling Fellow in Zoology of Harvard University, at University of Zürich, 1909-10; Sheldon Traveling Fellow in Zoology of Harvard University, at Biologische Versuchs Anstalt and K. K. Institut für Radiumforschung, Vienna, 1910-11; Instructor in Embryology, Cornell University Medical College, 1911-12. At Stanford, since 1912.

MAX LIPPITT LARKIN, Instructor in Economics.
Ph. M., University of Chicago, 1910. Fellow in Economics, University of Chicago, 1909-10. At Stanford, since 1911.

E. LEONARD LUNDGREN, Instructor in Applied Mathematics.
B. S., C. E., Armour Institute, 1904; C. E., Iowa, 1907, M. S., 1908. Assistant in Physics, Armour Institute of Technology, 1901-04; Instructor in Civil Engineering, State University of Iowa, 1907-08; Assistant Engineer, Railroad and Construction Work; Assistant Engineer, with Bureau of Public Works, Philippine Government, 1908-10, Project Engineer, 1910-12. At Stanford, since 1912.

ANNA SHIPLEY COX, Instructor in Latin.
A. B., Stanford, 1909, A. M., 1913. Instructor and Assistant Professor of Latin, College of the Pacific, 1909-12.

FRIEDRICH ALEXANDER WYNEKEN, Instructor in German.
B. L., University of California, 1906, M. L., 1907, Ph. D., 1912. Assistant in German, University of California, 1909-12, and in Summer Sessions of 1910 and 1911. At Stanford, since 1912.

STEPHEN IVAN MILLER, Jr., Instructor in Economics.
LL. B., University of Michigan, 1896; A. B., Stanford, 1898. Student at Heidelberg, 1900-02, University of Michigan, 1902-03; Quiz-Master, University of Michigan, 1903-04; Instructor in Economics and History, Pasadena High School, 1905-07; in United States Forest Service, 1908-10; Instructor in Economics, Los Angeles Polytechnic High School, 1910-12. At Stanford, since 1912.

‡WILLIAM FREDERICK SKAER, Instructor in Physiology.
A. B., Missouri, 1911, A. M., 1912. University Scholar, University of Missouri, 1911-12.

CLARENCE P. CAMPBELL, Instructor in Mechanical Engineering.
A. B., Stanford, 1913.

EMIL FREDERIC HOLLMANN, Assistant Academic Secretary.
A. B., Stanford, 1911.

ALICE RUTH BERGER, Acting Instructor in Chemistry.
A. B., Stanford, 1908. At Stanford, since 1911.

ELIZABETH LEE BUCKINGHAM, Acting Instructor in English.
A. B., Stanford, 1910. At Stanford, since 1911.

HENRY TRUMAN BECKWITH, Acting Instructor in Mining.
A. B., Stanford, 1908.

MARY WILHELMINE WILLIAMS, Acting Instructor in History.
A. B., Stanford, 1907, A. M., 1908.

‡ Resigned November 1, 1912.

FLOYD CROMWELL BROWN, Acting Instructor in Civil Engineering.

A. B., Stanford, 1913.

EMANUEL CHARLES FLEISCHNER, Clinical Instructor in Medicine, subdivision of Pediatrics.

M. D., Yale, 1904; Past Resident Physician, New Haven Hospital, 1905; Nursery and Children's Hospital, 1906; Volunteer Assistant to the Knopfelmacher Klinik, Vienna, 1907; Instructor in Pediatrics, Cooper Medical College, 1909-11. At Stanford, since 1912.

WALTER WHITNEY BOARDMAN, Clinical Instructor in Medicine, Medical Clinic.

M. D., Cooper Medical College, 1909. Clinical Instructor in Medicine, University of California, 1906; Assistant in Phipps Dispensary, Johns Hopkins Hospital, 1910, Assistant in Actinography and Externe in Gynecology, 1911; Director of Actinography, Lane Hospital, 1912. At Stanford, since 1912.

MORTON RAYMOND GIBBONS, Clinical Instructor in Medicine, subdivision of Pediatrics.

A. B., University of California, 1891; M. D., Cooper Medical College, 1894. Instructor in Clinical Medicine, Cooper Medical College, 1904-09; Student, London and Vienna, 1910. At Stanford, since 1912.

WALTER FRANK SCHALLER, Clinical Instructor in Medicine.

M. D., Cooper Medical College, 1902. Interne, German Hospital, San Francisco, 1902-03; Assistant, San Francisco Polyclinic, 1903-05; Assistant in Pathology, Cooper Medical College, 1905-06; Assistant Surgeon, U. S. N., 1906-08.

SOLOMON HYMAN, Clinical Instructor in Surgery.

B. S., California, 1898; M. D., Johns Hopkins, 1902. House Surgeon Mt. Sinai Hospital, New York, 1903-05; Adjunct Surgeon, Mt. Zion Hospital, San Francisco 1905-10; Instructor in Surgery, Cooper Medical College, 1905-12.

WILLIAM REDWOOD PRICE CLARK, Clinical Instructor in Medicine.

M. D., Cooper Medical College, 1899. House Physician, St. Luke's Hospital, 1900; Assistant Visiting Physician, City and County Hospital, San Francisco, 1901-04; Instructor in Medicine, Cooper Medical College, 1905-11; Visiting Physician, Clinic of the San Francisco Association for the Study and Prevention of Tuberculosis, 1909-12; Visiting Physician, City and County Tuberculosis Hospital, San Francisco, 1911-12.

HENRY WALTER GIBBONS, Clinical Instructor in Gynecology and Obstetrics.

B. S., University of California, 1899; M. D., Cooper Medical College, 1902. Interne, City and County Hospital, San Francisco, 1902-03; Instructor in Pathology, Cooper Medical College, 1905-07, Instructor in Gynecology, 1907-11.

GEORGE PRESTON WINTERMUTE, Clinical Instructor in Surgery, Ear, Nose, and Throat Clinic.

M. D., Jefferson Medical College, 1893. Student, Columbia University, 1899, London, 1900, Vienna, 1907-08, Berlin and Vienna, 1910-12.

HENRY HERBERT YERINGTON, Clinical Instructor in Medicine, Subdivision of Pediatrics.

M. D., College of Physicians and Surgeons, New York, 1908. Student, Stanford University, 1900-04. Interne and House Physician, Bellevue Hospital, New York, 1908-09; Instructor in Pediatrics, Cooper Medical College, 1910-11.

GEORGE ROTHGANGER, Clinical Instructor in Surgery.

A. B., University of California, 1885; M. D., Cooper Medical College, 1888. Interne, City and County Hospital, San Francisco, 1888-89; Assistant Surgeon, U. S. N., 1889-1908.

LECTURERS

MORRIS ELMER DAILEY, Lecturer in Education.

A. M., Indiana, 1897; LL. D., Drake, 1901. Superintendent of City Schools, Fresno (Cal.), 1897-99; Vice-President and Teacher of History, San Jose State Normal School, 1899-1900, President since 1900.

SAMUEL WILSON CHARLES, Lecturer in Law.

A. B., Stanford, 1898.

SAMUEL McCHORD CROTHERS, Raymond F. West Lecturer on Immortality.

A. B., Princeton, 1874; D. D., Harvard, 1899; Litt. D., St. Lawrence, 1904, Princeton, 1909. Student, Union Theological Seminary, 1874-77, Harvard Divinity School, 1881-82. Pastor, Presbyterian Church, Eureka, Nev., 1877-78, Gold Hill, Nev., 1878, Santa Barbara, California, 1879-81; Pastor, Unitarian Church, Brattleboro, Vt., 1882-86, St. Paul, Minn., 1886-94, First Church, Cambridge, Mass., since 1894.

GOTTFRIED EMANUEL HULT, Lecturer in English Literature.

A. B., University of Minnesota, 1892, A. M., 1893. Student, University of Leipzig, 1896-99, University of Chicago, 1899-1900; Professor of the Greek Language and Literature, University of North Dakota, since 1907.

MARTIN ABRAHAM MEYER, Lecturer in Philosophy.

A. B., Cincinnati, 1899; B. D., Hebrew Union College, 1901; Ph. D., Columbia, 1906. Fellow, American School, Jerusalem, 1901-02; Rabbi, Albany, N. Y., 1902-06, Brooklyn, N. Y., 1906-10, Temple Emanu El, San Francisco, since 1910.

RESEARCH FELLOW

JOHN EDGAR COOVER, Research Fellow in Psychical Research.

A. B., Stanford, 1904, A. M., 1905, Ph. D., 1912.

ASSISTANTS

[[1] First semester; [2] second semester.]

Greek

[2]MABEL ADELLA BREKKE.

A. B., Stanford, 1913.

[1]JOSEPHINE VERONICA MacCORMAC.

A. B., Stanford, 1912.

FRANCES DOROTHY PARKER.

A. B., University of Nevada, 1910, A. M., 1912.

Latin

[2]WILLIAM CHISLETT, Jr.

A. B., Stanford, 1910, A. M., 1912.

[2]DONELLA MARY CROSS.

A. B., Stanford, 1910, A. M., 1911.

[1]MABEL HARRIETT USINGER.
A. B., California, 1911.

Germanic Languages

NETTA HAFFNER HILMER.
B. S., Michigan, 1895; A. M., Wisconsin, 1906. Assistant Principal H. S., Seymour, Wis., 1895-96; Instructor in Chemistry, Mt. Holyoke College, 1896-98; Student, University of Leipzig, 1899-1900; Principal H. S., Sturgis, Mich., 1900-04; Graduate Student, University of Wisconsin, 1904-06; Teacher of German, Wisconsin Academy, Madison, Wis., 1904-05; W. F. Allen Scholar in Germanic Philology, University of Wisconsin, 1905-06.

Romanic Languages

DOROTHY PARKS GUNNELL.
GEORGE LOUIS LAWRENCE.
WILLIAM ANTHONY LOGAN.
BENJAMIN FRANKLIN LUKER.
A. B., Washington and Lee, 1909, A. M., 1910.
JEANNE ROSE ROUILLER.

English

MARGERY BAILEY.
MARJORIE CHARLES DRISCOLL.
[1]CLARENCE BRAY HAMMOND.
A. B., Stanford, 1912.
ARTHUR GARFIELD KENNEDY.
A. B., Doane, 1902; A. M., Nebraska, 1905.
RUSSELL OSBORNE STIDSTON.
A. B., Stanford, 1911, A. M., 1912.

Philosophy

SHO OSHIMA.

Psychology

WILLIAM THOMAS ROOT.
A. B., Stanford, 1912.

Education

EDITH NAOMI BENTLEY.
[2]WILFORD EBENEZER TALBERT.

History

LOUISE AVERY.
[2]FRANK ELLIOTT BARROW, International Conciliation.
CLAYTON DOUGLASS CARUS.
[1]LETTIE DE VOE HOLBROOK.
THOMAS POWDERLY MARTIN.
GLADYS AMIEL PECK, Stenographer.
A. B., Stanford, 1911.
GEORGE LUTES RIGHTER.
A. B., Stanford, 1912.

FRANK MARION RUSSELL.
A. B., Stanford, 1912.
[2]HETTIE ALICE WITHEY.

Economics

WILLIAM EDWARD COX.
A. B., Texas, 1909, A. M., 1910.
CLARENCE EDWIN FLEMING.
[2]JACOB ANTON DE HAAS.
A. B., Stanford, 1910; A. M., Harvard, 1911.
[2]CLARENCE BRAY HAMMOND.
A. B., Stanford, 1912.

Law

MAURICE TIMOTHY DOOLING, JR.
A. B., Stanford, 1912.
GEORGE JUAN HATFIELD, Law Library.
A. B., Stanford, 1911, A. M., 1912.
GRANT HOLCOMB, Law Library.
A. B., Stanford, 1911.
JOHN PAUL MILLER, Mimeographer.
IGNATIUS MARTIN PECKHAM, Law Library.
A. B., Stanford, 1911.
EDMUND WRIGHT PUGH.
A. B., Stanford, 1911.
WARD CLARK TITTLE.
[1]FREDERICK BERTRAM WOOD, Law Library.
A. B., Stanford, 1910.

Graphic Art

[2]BIRGE MALCOLM CLARK.
[1]JAMES LEO DUFF.

Mathematics

HENRY CARLETON BURBRIDGE, Mathematics and Physics.
A. B., Stanford, 1908.
[2]SYDNIE AILEEN GARDNER.
GEORGE WILBER MOFFITT, Mathematics and Physics.
A. B., Iowa, 1910.
[1]PEARL ELIZABETH WATERS.
A. B., Stanford, 1912.

Applied Mathematics

[2]EDWIN PRESCOTT BLY.
JOEL BEAN COX.
[2]WALTER JENNINGS DODGE.
JESSE ERNEST HAYES, Applied Mathematics and Civil Engineering.
[2]KENNETH IRVING MARSHALL, Applied Mathematics and Mechanical Engineering.
ROMNEY LEIGH VAUGHN, Applied Mathematics and Civil Engineering.

Physics

HENRY CARLETON BURBRIDGE, Physics and Mathematics.
A. B., Stanford, 1908.

BERTHA BLANCHARD HOWELL.
A. B., Northwestern, 1912.

GEORGE WILBER MOFFITT, Physics and Mathematics.
A. B., University of Iowa, 1910.

MORRIS WENK, Technical Assistant.
A. B., Stanford, 1912.

ALTO ECHO WISEMAN.
A. B., Stanford, 1912.

Chemistry

JOHN McKEE DODD.

EDWIN REGINALD HARDING.
A. B., Stanford, 1913.

ELMER R. EWELL, Custodian of Laboratory.

WIN RAWDON GODDARD.

HUGH HAROLD MOSHER.

ROBERT LINDLEY MURRAY.

ZENO OSTENBERG.
A. B., Stanford, 1913.

LOUIS WILLIAM PINGREE.
A. B., Stanford, 1912.

THOMAS BENJAMIN SCOTT, Storekeeper.

FRANCIS SITWELL PRATT.

WILLIAM JOHN VAN SICKLIN.
A. B., Stanford, 1912.

WALDO RALPH WAELTY.

Botany

GEORGIA HELEN BENTLEY.

TAYLOR JAY BLETHEN.

[2]CHARLOTTE ELLIOTT.
A. B., Stanford, 1907.

FRANK JASON SMILEY.

[1]HENRY LORD WASHBURN.

[1]FLORENCE WILLIAMS.
A. B., Stanford, 1911, A. M., 1912.

Physiology and Histology

FORREST EDWIN BOYD.

ROSCAL LEROY DRAPER.

WILLARD E. KAY, JR.
A. B., Stanford, 1912.

JOHN EDWIN PAULSON.
HOWARD FRANK WEST.
A. B., Stanford, 1912.

Anatomy

[2]ERNEST RISLING.

Bacteriology

ARTHUR RICHARD MEINHART.
[1]CLYDE T. WETMORE, Bacteriology and Gymnasium.
A. B., Stanford, 1913.

Pharmacology

[1]JAMES PORTER CRAWFORD, Pharmacology and Gymnasium.
A. B., Stanford, 1912.
[2]EDWIN REGINALD HARDING, Pharmacology and Chemistry.
[2]GEORGE BYRON LYMAN.
[1]BERTRAM AUGUST RISLING.
[1]HARRY JAMES SMITH.
A. B., Stanford, 1912.
[2]MARGARET MARIE TWOMBLY.
A. B., Stanford, 1912.
[2]WILLIAM IRWIN WEAVER.

Encina Gymnasium

JOHN FRYE CHAPMAN.
A. B., Stanford, 1909.
[1]JAMES PORTER CRAWFORD, Gymnasium and Pharmacology.
A. B., Stanford, 1912.
FRANK HOWARD HILTON.
A. B., Stanford, 1911.
GEORGE STEVENSON HOLEMAN.
[1]ERNESTO RAY KNOLLIN.
HENRY WILFRED MALONEY.
EARL THEODORE SCOTT.
FRANK LEONARD STILLSON, Custodian of Gymnasium.
[2]ARCHER BELL STUART.
[1]CLYDE T. WETMORE, Gymnasium and Bacteriology.
HARRY ALPHONSO WYCKOFF.
A. B., Stanford, 1907.
[2]CHARLES HYDE WOLLASTON.

Roble Gymnasium

[2]FLORENCE COTTON BURRELL.
A. B., Stanford, 1910.
[2]HAZEL GERTRUDE CARUS.

CATHARINE MORRIS COX.
A. B., Stanford, 1912.

[2]ETTA LOUISE PARIS.
Graduate, Sargent's School for Physical Education, 1908; Student of Mme. Zeniné, and of Gilbert School of Dancing, Boston; Student, Harvard Summer School of Physical Training, 1910; Teacher of Physical Training, Y. W. C. A., Indianapolis (Ind.), 1908-10, Columbia College of Expression, 1910-11, Durant Gymnasium, 1911-12.

Entomology and Bionomics

MAY KNIGHT BELL.
LEROY CHILDS.
FRANKIE WILLARD.
A. B., Stanford, 1911.

[2]WILLIAM FRANCIS THOMPSON.

Geology and Mining

CARL HUGH BEAL, Curator of Collections.
SADIE KEEN, Stenographer.
GROVER BERNER LANTZ, Metallurgy.
WARREN GOSSELIN COOPER.

Civil Engineering

[1]ARTHUR WILLIAM AMBROSE.
CHARLES EDWARD BEECHER.
[1]EDWIN PRESCOTT BLY.
[1]ROBERT FRANCIS DURYEA.
[1]CLARENCE BERNARD GOODWIN.
A. B., Stanford, 1913.

[1]NORMAN MARSHALL HALCOMBE.
A. B., Stanford, 1913.

GEORGE W. HAWLEY.
JESSE ERNEST HAYES, Civil Engineering and Applied Mathematics.
CHAUNCEY TENNENT KEEFER.
HARRY LEWIS McCREADY.
[2]DAVID LEE NARVER.
[2]ARTHUR CHARLES SANDSTROM.
EARL CHARLES THOMAS.
ROMNEY LEIGH VAUGHN, Civil Engineering and Applied Mathematics.
[2]STEPHEN KNIGHT WHIPPLE, Jr.

Mechanical Engineering

FRANK DANIEL BANHAM, Foreman Mechanician Shop.
WALLACE ROLLAND FINNEY.
A. B., Stanford, 1913.

WILLIAM BOOMER FORBES, Stenographer.
[2]JAMES ALBERT GIBB.
[2]FRANK JULIUS GLEISS.
HARLEY C. GREGG, Machinist Helper.
MYRTIL COLE HAVENS, Mechanician.
WILLIAM CLEMONS HORNE, Custodian of Shops.
[2]KENNETH IRVING MARSHALL, Mechanical Engineering and Applied Mathematics.
EDWARD LAWRENCE PECK.
WALTER UHLMAN, Engineer.

Electrical Engineering

[2]GEORGE LOVELL BEAVER.
[1]FRANK E. CORBALEY, Laboratory Attendant.
[2]HERBERT JOSEPH SCHOLZ, Laboratory Attendant.
[2]NORMAN JEROME MITTENTHAL.

Medicine

HOWARD FELIX ADLER.
B. S., California, 1904; M. D., Harvard, 1908. German Hospital, New York City, 1908-11.

WILLIAM HENRY BANKS.
M. D., Cooper Medical College, 1904. Interne in Lane Hospital, 1904-05; Assistant in Medicine, Cooper Medical Dispensary, 1909-11.

SHADWORTH OLDHAM BEASLEY, Gynecology.

JOHN ROBERT BURROWS, Surgery.
M. D., Cooper Medical College, 1906. Interne, Lane Hospital, 1906-08; Assistant in Ophthalmology, Cooper Medical College, 1909.

EDGAR DALE DOWNING, Pathology.
M. D., Cooper Medical College, 1911. Assistant in Ophthalmological Clinic, Cooper Medical College, 1911-12.

ARTHUR LAWRENCE FISHER, Surgery.
B. S., California, 1896; M. D., Johns Hopkins, 1900. Resident House Officer, Johns Hopkins Hospital, 1900-01; Fellow, Rockefeller Institute for Medical Research, 1901-02; Assistant Visiting Surgeon, Mt. Zion Hospital, San Francisco, 1902-08.

FREDERICK MEARS GEDNEY, Surgery.
M. D., Cooper Medical College, 1903.

AARON SAMUEL GREEN, Surgery.
M. D., Denver and Gross College of Medicine, 1908.

SYLVAN LEWIS HAAS, Surgery.
B. S., University of California, 1904; M. D., Johns Hopkins Medical School, 1908.

FLORENCE MABEL HOLSCLAW, Pediatrics.
A. B., Stanford, 1894; M. D., Cooper Medical College, 1897; Interne, City and County Hospital, San Francisco, 1898-99; Interne, Lane Hospital, 1899-1900; Assistant in Pediatrics, Cooper Medical College, 1900-11; Student in Vienna and London, 1910.

CLARENCE ELMER HYDE.

A. B., Stanford, 1905; M. D., Columbia, 1907. Interne and House Physician, Post Graduate Hospital, New York, 1910-12.

MARIO ISNARDI, Gynecology.

GEORGE DUNLAP LYMAN.

A. B., Stanford, 1905; M. D., Columbia, 1909. Interne and House Physician, Bellevue Hospital, New York, 1909-11.

PETER HARRISON LUTTRELL.

M. D., Cooper Medical College, 1908. Assistant in Medical Clinic, Cooper Medical College, 1908-10; Instructor in Physical Diagnosis, Cooper Medical College, 1910-11; Assistant in Medical Wards, Lane Hospital, since 1911.

HARVARD YOUNG McNAUGHT, Surgery.

M. D. C. M., Trinity University, 1897. Fellow by Examination, Trinity Medical College, 1897; Resident Surgeon, Emergency and General Hospital, Los Angeles, 1903; Assistant, Ear, Nose, and Throat Clinic, Cooper Medical College, 1911-12.

CHESTER BIVEN MOORE, Obstetrics.

B. S., California, 1906, M. D., 1910. Interne, University of California Hospital, 1909-11; House Officer, Children's Hospital, Boston, 1911-12.

HAROLD S. MOORE.

M. D., Medical College of Indiana, Purdue University, 1898. Assistant, Indianapolis City Clinic; Assistant Surgeon, U. S. A., 1898-1901; Student, Milan University, 1901, New York, 1904-06, Munich and Paris, 1908-09; Assistant, Ear, Nose, and Throat Clinic, Cooper Medical College, 1910.

ARTHUR ALOYSIUS O'NEILL.

M. D., Cooper Medical College, 1891. Assistant Surgeon, Cooper Medical College Clinic, 1893; Assistant in Diseases of the Skin, San Francisco Polyclinic, since 1902; in charge of Isolation and Plague Hospital, 1907-10, of Isolation Hospital, 1912.

ANNA ELIZABETH RUDE, Obstetrics and Gynecology.

M. D., Cooper Medical College, 1906. Interne, Children's Hospital, San Francisco, 1906-07; Assistant Resident Physician, Fabiola Hospital, Oakland, 1907-08; Assistant in Gynecology, Cooper Medical College, 1908-10; Assistant to Obstetrical Service, Children's Hospital, since 1910; Assistant in Obstetrics, Cooper Medical College, 1912; in charge of General Clinic, Telegraph Hill Association, 1911-12, Baby Feeding Clinic, Associated Charities, San Francisco, since 1909.

HOWARD SOMERS, Surgery.

M. D., Cooper Medical College, 1904; B. S., University of California, 1909. Assistant in Genito-Urinary Surgery, Johns Hopkins University Medical School, 1909-10; Assistant in Surgery, University of Berlin, 1910-11, San Francisco Polyclinic, 1911-12.

FRANK PIXLEY TOPPING, Gynecology.

M. D., Cooper Medical College, 1899. Interne, German Hospital, San Francisco, 1899-1900; Student, New York, 1900-01, Vienna, 1901, Rotunda Hospital, Dublin, 1902; Assistant in Medical Clinic, Cooper Medical College, 1902-03; Instructor in Gynecology, 1904-12; Obstetrician to German Hospital, San Francisco, 1909-10, Acting Visiting Physician, 1910.

ROLAND BEATTY TUPPER.

M. D., Cooper Medical College, 1910. Assistant Visiting Physician, St. Luke's Hospital, 1912; Assistant in Pediatrics, Cooper Medical College, 1912.

ROSCOE GOLDEN VAN NUYS.

A. B., Oberlin, 1907; M. D., Rush Medical College, 1911. Lane Hospital, 1911-12.

WALTER HOEPFNER WINTERBERG, Surgery.

M. D., Cooper Medical College, 1895. Student, University of California, 1890-91; Acting Assistant Surgeon, U. S. A., 1898-1900; Captain and Assistant Surgeon, U. S. V., 1901-02; Assistant in Surgery, Cooper Medical College, 1903-07; Instructor, 1908-10.

JULIAN MAST WOLFSOHN, Neurology.

A. B., University of California, 1905, M. S., 1907; M. D., Johns Hopkins University Medical School, 1911. Research Assistant, Herzstein Laboratory, University of California, 1906-07; Medical House Officer, Johns Hopkins Hospital, 1911-12.

GEORGE AUGUSTUS WOOD, Obstetrics and Gynecology.

CHESTER HOWARD WOOLSEY, Surgery.

B. S., University of California, 1895, M. D., 1901. Assistant to Chair of Clinical Medicine, University of California, 1902-06; Graduate Student, Cornell University Medical College, 1906-07; State Bacteriologist, California, 1903-04; Assistant Chair of Genito-Urinary Surgery, Cooper Medical College, 1911-12.

President's Office

WALDRON A. GREEN.

[2]FANNIE HADDEN, Secretary to Committee on Public Health.

KENNETH MAYER.

CARL JOSEPH PARK, Lantern Operator.

AGNES C. RAMSEY, Mimeographer.

JAMES BERYL SPEER, Stenographer.

A. B., Montana, 1908. President's Secretary, University of Montana, 1908-09, Registrar and President's Secretary, 1909-12.

LEONA ESTHER STAPLETON, Stenographer.

[1]MARTHA ELLEN VICKERY, Secretary to Committee on Public Health.

A. B., De Pauw, 1887. Assistant Director, Instituto Internazionale Crandon, 1891-93, Director 1893-98; Director, Crandon Hall, Rome, Italy, 1896-1906; Graduate Student, University of Chicago, 1904-05; Student of Language, Sorbonne, Paris, and University of Rome, Summer Sessions.

Registrar's Office

LYDIA MARIE BOEZINGER.

ESTHER KARLEENE HOLLMAN.

[2]RUSSELL PRICE MARBLE.

University Library

Staff

HELEN BINNINGER SUTLIFF, Chief Cataloguer.

A. B., Kansas, 1890. Head Cataloguer, University of Kansas Library, 1891-1905; Cataloguer in Columbia University Library, Summer, 1901.

ALICE NEWMAN HAYS, Reference Librarian.

A. B., Stanford, 1896; B. L. S., New York State Library School, 1903. Assistant, Home Education Department, New York State Library, 1901.

FRANCES SOPHIA COURTENAY JAMES, Medical Librarian.
A. B., Wisconsin, 1904, A. M., 1905. Graduate Student, University of Wisconsin, 1905-07; Cataloguer, Wisconsin Historical Library, 1901-07, University of Washington, 1907-08.

CHARLES V. PARK, Chief of Loan Desk.
A. B., Stanford, 1909.

ELIZABETH HADDEN, Chief of Order Department.

LUCIA MAY BROOKS, Chief of Serial Department.
Cataloguer, University of Minnesota Library, 1905-09.

ANNA GERTRUDE HALL, Cataloguer.
A. B., Stanford, 1906.

LENA MARGUERITE KELLER, Cataloguer.

Assistants

CATHERINE IDA BIRCH, Order Department.
A. B., Stanford, 1911.

LUCRETIA BOULWARE, Order Department.
A. B., Stanford, 1904.

FREDERICK EDWARD BRASCH, Loan Desk.

AGNES ELIZABETH BROWN, Loan Desk.
A. B. Stanford, 1906.

MARGUERITE BROWN, Catalogue Department.

CHESTER ARTHUR CHILES, Catalogue Department.

[1]JOHN DANIEL COOKE, Loan Desk.

THOMAS LAFAYETTE DYER.

IDA R. HAYWARD, Lane Library.

ETHEL GRACE HEALD, Serial Department.

[2]LILLIAN A. HOLLMAN.

MARION HORTON, Catalogue Department.

[1]LYDIA ESTHER KINGSLEY, Lane Library.

JEANNETTE CATHERINE MORGAN, Catalogue Department.
A. B., Stanford, 1909.

OLLIS WILLARD NEWMAN, Loan Desk.

[2]JEAN REDMAN OLIVER, Lane Library.

LOUISE OPHÜLS, Lane Library.

PHILIP D. B. PERHAM, Loan Desk.

LOUISE MARIE PETERS, Cataloguer.

MARY ELVIRA SMITH, Assistant Classifier.
Ph. B., Ottawa University, 1905.

TALMADGE LAUGHNER SMITH.

MINNA STILLMAN, Reference Room.
A. B., Stanford, 1903.

LEROY EDWARD TAYLOR.

HANNAH LILLIAN TODD.

LAURA AGNES WILLIAMSON, Cataloguer.
A. B., University of California, 1909.

FREDERICK BERTRAM WOOD.
A. B., Stanford, 1910.

MARY JEANNETTE WOODRUFF, Stenographer.

Memorial Church

GODFREY CARL BUEHRER, Organist.
A. M., Rensselaer College (Indiana), 1896; Mus. Doc. Hon., Santa Clara College, 1907. Student Scola Cantorum, Paris, 1904-06; Instructor of Band, Orchestra, and Choir, Rensselaer College, 1892-96; Instructor, St. Joseph's College, San Jose, 1897-98; Organist, St. Joseph's Church, San Jose, 1899-1908; Professor of Music, Santa Clara College, 1901-05.

Leland Stanford Junior Museum

HARRY C. PETERSON, Curator.
Charter Member American Museum Association.

Encina Hall

ALVIN H. FRANK, Chairman of Committee.

Roble Hall

MRS. ELLA ROLKER, Matron.

ORGANIZATION

Foundation

The Leland Stanford Junior University was established under an Act of the Legislature, approved March 9, 1885, entitled "An Act to advance learning, the arts and sciences, and to promote the public welfare by providing for the conveyance, holding, and protection of property, and the creation of trusts for the founding, endowment, erection, and maintenance within this State of universities, colleges, schools, seminaries of learning, mechanical institutes, museums, and galleries of art." The Founding Grant, executed November 11, 1885, was made public at a meeting of the Board of Trustees, held in San Francisco, November 14, 1885. The cornerstone of the inner quadrangle was laid May 14, 1887, and the institution opened to students October 1, 1891.

Nature, Object, and Purposes of the University

We, Leland Stanford and Jane Lathrop Stanford, husband and wife, grantors, desiring to promote the public welfare by founding, endowing, and having maintained upon our estate known as the Palo Alto Farm, and situated in the Counties of San Mateo and Santa Clara, State of California, United States of America, a university for both sexes, with the colleges, schools, seminaries of learning, mechanical institutes, museums, galleries of art, and all other things necessary and appropriate to a university of high degree, to that end, and for that purpose, do hereby grant," etc.

"And that the trust hereby created may be executed according to the wishes of the grantors and each of them, they do hereby designate the Nature, Object, and Purposes of the Institution hereby founded, to be:

"Its nature, that of a University, with such seminaries of learning as shall make it of the highest grade, including mechanical institutes, museums, galleries of art, laboratories, and conservatories, together with all things necessary for the study of agriculture in all its branches, and for mechanical training, and the studies and exercises directed to the cultivation and enlargement of the mind;

"Its object, to qualify students for personal success and direct usefulness in life;

"And its purpose, to promote the public welfare by exercising an influence in behalf of humanity and civilization, teaching the blessings

of liberty regulated by law, and inculcating love and reverence for the great principles of government as derived from the inalienable rights of man to life, liberty, and the pursuit of happiness."

Name of the University

"Since the idea of establishing an institution of this kind, for the benefit of mankind, came directly and largely from our son and only child, Leland, and in the belief that had he been spared to advise as to the disposition of our estate, he would have desired the devotion of a large portion thereof to this purpose, we will that for all time to come the institution hereby founded shall bear his name, and shall be known as The Leland Stanford Junior University."

Management and Control of the University

The general management and control of the institution is vested in a Board of Trustees originally numbering twenty-four, and chosen for life. By the Amending Act of May 31, 1899, the number of trustees is reduced to fifteen, with future elections for a term of ten years. The Board of Trustees fills all vacancies.

Powers and Duties of the Trustees

"The Trustees shall have power and it shall be their duty:

"To appoint a President of the University, who shall not be one of their number, and to remove him at will.

"To fix the salaries of the President, Professors, and Teachers, and to fix them at such rates as will secure to the University the services of men of the very highest attainments.

"To establish and maintain at such University an educational system which will, if followed, fit the graduate for some useful pursuit, and to this end to cause the pupils, as early as may be, to declare the particular calling which in life they may desire to pursue. . . .

"To prohibit sectarian instruction, but to have taught in the University the immortality of the soul, the existence of an all-wise and benevolent Creator, and that obedience to His laws is the highest duty of man.

"To have taught in the University the right and advantages of association and coöperation.

"To afford equal facilities and give equal advantages in the University to both sexes.

"To maintain on the Palo Alto estate a farm for instruction in agriculture in all its branches.

"The Board of Trustees shall annually report all their proceedings to the person who for the time being shall fill the office of

Governor of the State of California, and shall accompany such report with a full account of their financial operations for the preceding year, and with a statement of the financial affairs of the institution."

Powers and Duties of the President

"It shall be the duty of the Trustees to give to the President of the University the following powers:

"To prescribe the duties of the professors and teachers; to remove professors and teachers at will; to prescribe and enforce the course of study and the mode and manner of teaching; such other powers as will enable him to control the educational part of the University to such an extent that he may justly be held responsible for the course of study therein and for the good conduct and capacity of the professors and teachers."

Amendments to the Founding Grant

A clause in the Founding Grant reserved to the grantors the right to alter, amend, or modify the terms and conditions of the grant in important particulars. Under this provision amendments were made by Mrs. Stanford, June 1, 1897; May 31, 1899; March 28, 1902; October 3, 1902; June 1, 1903. These amendments were concerned mainly with matters of detail, but provided also "that the number of women attending the University as students shall at no time ever exceed five hundred."

An Amendment to the Constitution of the State of California, adopted November 6, 1900, "permitted, approved and confirmed all the trusts, estates, terms, and conditions" of the Founding Grant and of all the deeds, conveyances, and other instruments made and delivered before that date, and authorized the Legislature, under certain conditions, to exempt the property of the University from taxation.

The University Faculty

"The Trustees shall constitute the President and professors the faculty of the University, and shall prescribe their powers and duties as such."

Under the Articles of Organization, adopted by the Board of Trustees March 31, 1904, the power and authority of the University Faculty is vested in the Academic Council, consisting of the President of the University, the professors and associate professors, the librarian, the registrar, such assistant professors as have been upon the roll of the faculty for three years, whether as assistant professors or instructors, and such other officers of the University or

members of the teaching staff as the Academic Council may, with the assent of the Board of Trustees, determine.

All general University regulations, statutes, and rules as to matters within the province of the faculty, must be initiated in and passed by the Academic Council. The Academic Council has general power and responsibility for the internal administration of the University, subject to express provisions contained in the Articles of Organization respecting the methods of exercising such powers through the President of the University, the Advisory Board, the Standing Committees, and the Department Faculties.

The Advisory Board consists of nine members of the rank of professor, one from each of the five department groups, and four chosen without reference to groups. All executive acts of general importance, such as recommendations for appointments, promotions, and dismissals, for the creation of new departments or chairs, etc., must be submitted by the President to the Advisory Board. The Advisory Board is also privileged to make such recommendations to the President, regarding policy, as it may decide by vote to be expedient, but no recommendations for appointments, promotions, or dismissals, may originate with the Advisory Board.

The Executive Committee of the Academic Council consists of the President, Vice-President, Registrar, and two members from each department group elected by the Academic Council. The Executive Committee appoints the Academic Committees of the Council.

The Standing Administrative Committees of the Council are appointed by the President subject to the approval of the Advisory Board.

The Department Faculties consist of the professors, associate professors, assistant professors, and instructors in the several departments, but only members of the Academic Council have the right to vote. A Department Faculty has direction of the work of instruction in the department and of the internal administration of the department, subject only to such control as is vested in the Board of Trustees, the President of the University, and the Academic Council. The Executive Head of the Department Faculty is designated by the President with the approval of the Advisory Board and of the Board of Trustees.

Departments

The work of the University embraces the following departments, divided into groups for the purpose of elections to the Advisory Board and Executive Committee, as indicated:

(I) Greek, Latin, Germanic Languages, Romanic Languages, English Literature and Rhetoric, English Philology; (II) Botany,

Physiology and Histology, Zoology, Entomology and Bionomics, Medicine, Anatomy, Bacteriology and Immunity; (III) Psychology, Mathematics, Physics, Chemistry, Geology and Mining; (IV) Philosophy, Education, History, Economics, Law; (V) Graphic Art, Applied Mathematics, Civil Engineering, Mechanical Engineering, Electrical Engineering.

The Marine Biological Laboratory, founded by the liberality of Mr. Timothy Hopkins, and located at Pacific Grove, on the Bay of Monterey, is a branch of the biological work of the University.

Location

The seat of the University, except for the advanced and clinical work in Medicine, is at Stanford University, in the Santa Clara Valley, thirty miles southeast of San Francisco, on the Coast Division of the Southern Pacific Railway. The grounds of the University consist of over seven thousand acres, partly level and partly rising into the foothills of the Santa Cruz Range. The Bay of San Francisco lies about three miles east of the University grounds. Across the bay the Monte Diablo Range rises to a height of over four thousand feet, the Lick Observatory crowning Mt. Hamilton, the highest of the range.

The Santa Clara Valley is one of the most attractive portions of the State in fertility, in natural beauty, and in the excellence of its climate. In winter the mercury rarely falls below 30 degrees, with an average midday temperature of about 55 degrees. In summer the midday temperature ranges between 60 degrees and 80 degrees, with occasional higher and lower numbers, the average being about 70 degrees; the nights are cool, the usual range being from 50 degrees to 58 degrees. The rainfall, normally about fifteen inches, is chiefly confined to the months from December to April, inclusive.

Buildings

The central group of buildings, constituting two quadrangles, the one surrounding the other, is an adaptation of the Mission Architecture, and reproduces on an imposing scale the open arches, long colonnades, and red tile roofing of the old Spanish Missions of California. The Inner Quadrangle consists of twelve one-story buildings and the Memorial Church, connected by a continuous open arcade, and surrounding a court 586 feet long by 246 feet wide, or three and a quarter acres. The buildings are of buff sandstone, somewhat varied in color, the stonework of broken ashlar, with rough rock-face, and the roofs covered with red tile.

The fourteen buildings of the Outer Quadrangle are constructed of the same material and in the same general style as the Inner Quadrangle, with open arcades on the outside. The extreme length of the Outer Quadrangle is 894 feet.

The Leland Stanford Junior Museum, situated a quarter of a mile from the Quadrangles, on the west side of the Palo Alto Avenue, contains the archæological and art collections of the University.

The Chemistry Building, located between the Quadrangles and the Museum, consists of two separate structures—the main building and the Assaying Laboratory.

Behind the central quadrangles are located the workshops of the Engineering departments, experimental laboratories, power-houses, etc.

The dormitories are east and west of the Quadrangles. Encina Hall, for men, is at the east, and has accommodations for three hundred students. Roble Hall, for women, is at the west, and will accommodate one hundred students. Madroño Hall, a frame building, at present leased to private parties, receive only women students. It will accommodate about thirty students.

Encina Gymnasium and Roble Gymnasium are frame buildings, equipped with the apparatus and appliances for physical training.

The University Inn is a frame building intended primarily as a University commons for students living on the campus.

The grounds immediately about the University have been reserved in part for experimental and ornamental purposes, in part as residence sites for members of the Faculty and others who may desire to live on the University campus.

The buildings of the Medical Department in San Francisco occupy four fifty-vara lots bounded by Clay, Sacramento, and Webster streets, and consist of the Clinical and Laboratory Building; Lane Hospital, a modern building in brick and stone, with a capacity of one hundred and eighty beds; the Nurses' Home; and the Lane Library, a fireproof structure of Colusa sandstone, three and a half stories high, with steel stacks accommodating 80,000 volumes.

The buildings of the Marine Biological Laboratory are located at Pacific Grove. They consist of two two-story structures, and contain four general laboratories, one lecture room, seventeen private rooms for investigation, and a dark room for photography.

ADMISSION TO THE UNIVERSITY

[For special regulations governing admission of women, see p. 53.]

I. FIRST-YEAR STANDING.

Candidates must be at least sixteen years of age. They must present satisfactory recommendations as to personal character, and must offer credentials amounting to fifteen entrance units as indicated below. Women must make formal application in advance on blanks to be furnished by the Registrar (see pp. 53-54).

An *Entrance Unit* represents a year's study in any subject in a secondary school, constituting approximately one quarter of a full year's work. In assigning credit values two laboratory, drawing, or practice periods, not requiring additional study or preparation, are regarded as the equivalent of one recitation period. The length of the school year is assumed to be from thirty-six to forty weeks.

Entrance on Recommendation

Undergraduate standing, without further tests, is granted as follows:

1. To graduates of approved preparatory schools who have completed a regular four years' course, amounting to not less than *fifteen* entrance units, and who are fully recommended to the University.

It is the purpose of the University to emphasize (1) quality of preparation and intellectual promise; (2) personal character and seriousness of purpose. Principals are expected to exact a high standard of scholarship as preliminary to recommendation, and to withhold recommendation from those who are undesirable or unpromising from the point of view of moral qualities or habits.

In fixing its recommending standard a school may properly provide that lower passing grades in a particular subject or subjects may be offset by a general high average or by decided intellectual promise. But subjects completed with private tutors, or under other than regular school conditions, should not ordinarily be recommended. Where the course of study includes the newer subjects, in which high school standards are not fixed, the quantity and quality of work must be specially evidenced; in music, the candidate will be expected to pass the examinations of the College Entrance Examination Board or similar university examinations.

Approved Preparatory Schools are schools maintaining full four years courses of high school work and accredited (1) by The New England College Entrance Certificate Board, by The North Central Association of Colleges and Secondary Schools, by colleges and universities of recognized standing, or (2) upon inspection undertaken or authorized by the University.

The University records of first-year students will be considered as additional evidence of the standing of preparatory schools and of their good faith and success in meeting the requirements of the University, and such evidence will be made use of in determining as to the continuance of accrediting relations.

2. To recommended graduates of California State Normal Schools, and to graduates of other Normal Schools approved by the California State Board of Education as of equal rank with California State Normal Schools, who are holders of the highest grade diploma issued by these Normal Schools. (For conditions on which advanced standing may be granted Normal School graduates, see p. 52.)

3. To holders of seventy-two-count Diplomas issued by the Regents of the State of New York, granted *with credit, with great credit,* or *with highest credit.*

4. To candidates from China, Japan, Mexico, and other foreign countries who present credentials showing the satisfactory completion of courses of study equivalent to those of approved American high schools. In Japan such courses of study must extend at least two years beyond graduation from a middle school; in Mexico, graduation from the National Preparatory School or from other preparatory schools maintaining six years courses, will be required. Before admission to the University such candidates must show ability to use, and to understand readily, both written and spoken English; if coming directly from these countries they must ordinarily expect to spend at least one year in an American preparatory school, or under special instruction in English, before being able to meet this test.

Recommendations will be considered at any time of the year, but, to avoid uncertainty and give opportunity for correction of errors and misunderstandings, they should be forwarded to the University as soon as possible after graduation.

Blanks for admission on recommendation may be obtained from the Registrar.

Entrance on Examination

No entrance examinations are given by the University. In general, candidates are advised to remain in the preparatory school until they fulfill the requirements for admission on recommendation; but if

prepared to enter on examination, or desiring to supplement incomplete recommendation, they should take the examinations of the College Entrance Examination Board which are held in all parts of the United States and in various foreign countries.

In 1913 the entrance examinations of the College Entrance Examination Board will be held June 16-21.

All applications for examination must be addressed to the Secretary of the College Entrance Examination Board, Post Office Sub-Station 84, New York, N. Y., and must be made upon a blank form to be obtained from the Secretary of the Board upon application.

Applications for examination at points in the United States east of the Mississippi River, also at points on the Mississippi River must be received by the Secretary of the Board at least two weeks in advance of the examinations, that is, on or before Monday, June 2, 1913; applications for examination elsewhere in the United States or in Canada must be received at least three weeks in advance of the examinations, that is, on or before Monday, May 26, 1913; and applications for examination outside of the United States and Canada must be received at least five weeks in advance of the examinations, that is, on or before Monday, May 12, 1913.

Applications received later than the dates named will be accepted when it is possible to arrange for the admission of the candidates concerned, but only upon the payment of $5 in addition to the usual fee.

The examination fee is $5 for all candidates examined at points in the United States and Canada, and $15 for all candidates examined outside of the United States and Canada. The fee (which cannot be accepted in advance of the application) should be remitted by postal order, express order, or draft on New York to the order of the College Entrance Examination Board.

A list of the places at which examinations are to be held by the Board is published about March 1st each year. Requests that the examinations be held at particular points, to receive proper consideration, should be transmitted to the Secretary of the Board not later than February 1.

In these examinations the University will accept a mark of 60 as the lowest passing grade.

A Definition of Requirements in the various subjects in which examinations are held is given in Document No. 53, issued by the Board. (Price 10 cents: address Secretary, College Entrance Examination Board, Post Office Sub-Station 84, New York, N. Y.)

Entrance Subjects

The standard of preparation is the four years' high school course. The proper co-ordination of high school subjects for the individual pupil is regarded as primarily a problem for the secondary school; the University is prepared to recognize for entrance credit any subject having an established place in the secondary school curriculum, in which adequate instruction is given and which is pursued to satisfactory results.

No prescription, other than English, is made. Candidates desiring to study mathematics must obviously offer such elementary mathematics as is not taught in the University, and engineering students are expected to offer also solid geometry and trigonometry. Candidates desiring to study Latin should offer at least two entrance units in that subject. The State law governing the practice of medicine in California prescribes, among other requirements, that the preparatory course of every person practicing medicine or surgery in the State shall have included two years of Latin (or four years of high school German or French, or its equivalent, provided a satisfactory examination is passed in the elements of Latin grammar), two years of mathematics, two years of English, one year of history, two years of laboratory science, and six years of further credits in language, literature, history, or science.

All first-year undergraduates (including special students, and students coming from other institutions with less than twenty units of advanced credit) will be required to satisfy the University standard in English Composition. This may be done by passing a special Matriculation Test given during matriculation week. The examination will test the candidate's ability to write exercises not only free from marked deficiencies in spelling, punctuation, sentence structure, and paragraphing, but also indicative of his ability to think consecutively on a simple subject. The subjects which are set at the time of the examination will be drawn for the most part from the candidate's own experiences.

A student who passes this test may be exempted from Composition work in the University, or may enter Course 2 in the Department of English. A student who does not pass will be required to register in English A at once (unless, by reason of numbers, such registration is postponed to a later semester), and remain in the course until his work is of passing grade. Some students, whose work shows exceptional promise of maturity, may be assigned to English 2 instead.

The definition of high-school subjects given by the College Entrance Examination Board (Document No. 53 issued by the Board) will serve as a standard, and also, for California schools, the outline prepared by the University of California. The following suggestions and explanations will indicate the attitude of the University in judging entrance credentials, but no attempt is made to enumerate all the subjects which may be properly included in the high school curriculum.

1. English.—The work in English Composition should be given at least two recitations a week throughout the entire high school course. The greater part of this time should be devoted to practice in writing, but it is recommended that some attention be also paid to instruction in the fundamental principles of formal rhetoric.

The work in English Literature should be given an average of at least three recitations a week throughout the four years of the preparatory course. It should be so conducted as to give the student not only an appreciative understanding of the books selected either for general or for more intensive study, but also a knowledge of their place in the history of English Literature, and especially an ability to read aloud intelligently both prose and verse.

In the History of English Literature preparation should consist in a brief outline with a view to making clear the character and the tendencies of the more important literary epochs and associating the chief books and authors in their proper periods.

2. Mathematics.—The work in Mathematics is usually distributed as indicated by the following unit values: algebra (1 to 2), plane geometry (1), solid geometry (½), trigonometry (½). Additional work may be offered in algebra and plane analytical geometry. The solution of numerous original problems and exercises is assumed throughout the course.

3. The Sciences.—In Physics, Chemistry, Physiology, Botany, Zoology, Hygiene, and General Science a full year's work in each is expected comprising, preferably, two recitation periods and three double laboratory periods per week. Accurate notes of the laboratory work should be kept. Any two of the biological sciences (Physiology, Botany, Zoology) may be combined into a continuous year's course. Astronomy may be offered as a half-unit course.

Students who receive entrance credit in Chemistry, and who wish to continue the subject in the University, will be admitted at once to course *a*11 and will be required to begin course 1.

In Physiology the text-book work should be accompanied by experiment, dissection of animals and organs, and a certain amount of study of the tissues with the microscope.

In Botany the main thing is that the work shall be of a practical nature; that the study be mainly specimens and not books. A study of the growth and development of the forms selected is of the highest importance, and should be made a prominent feature in the work. If possible, the pupil should be allowed the use of a compound microscope; but when this is not practicable, microscopic demonstrations by the instructor are indispensable.

In Hygiene the work should include adequate instruction in personal hygiene, the hygiene of occupation, and the relation of the citizen to the State in matters of sanitation and public health. Three periods per week of physical training and three periods in experimental laboratory work in Hygiene, and two recitations per week on Public Health, or an equivalent amount of work distributed over a longer period, will cover the requirements for one unit of credit.

4. History and Allied Subjects.—History should be offered in full unit courses covering respectively the following divisions: (*a*) Ancient, (*b*) Mediaeval and Modern, (*c*) English, (*d*) American. Civics may be offered as a part of American history, or as an additional half-unit course. Biblical History and Literature and Economics may each be offered as a half-unit or as a unit course.

In the History subjects, in addition to the text-book preparation, the following exercises are recommended: Supplementary reading, including the use of original material where possible, notes and digests of reading; abstracts or analyses of specified chapters, both of the text-book and supplementary reading; outlines of subjects, gathering material from all available sources; map drawing from printed data or comparison of existing maps, showing movements of exploration, migration or conquest, territorial changes, or social phenomena. Such work should be regarded as a means rather than the end of historical study, and in every instance should be adapted in character and amount to the stage of advancement of the class and of the individual pupil. As the pupil progresses in his study, more advanced work may well be required in the form of historical composition, and of note-taking in the class from talks by the teacher or reports of fellow pupils.

5-6. Spanish and French.—The elementary study of the languages, covering two years of daily recitations, should lay stress on the following points:

(1) An accurate knowledge of the forms of the languages; (2) The elements of syntax; (3) The ability to turn easy English prose into French or Spanish; (4) The ability to translate ordinary French or Spanish into idiomatic English; (5) The ability to pronounce French and Spanish correctly.

The Intermediate requirements are intended to represent a third year of daily recitations. The specific demands are:

(1) A thorough knowledge of modern French and Spanish syntax. (2) The ability to turn ordinary modern French and Spanish at sight into idiomatic English. (3) The ability to translate connected English prose of moderate difficulty into French or Spanish. (4) The ability to write French or Spanish from dictation. (5) Some facility in speaking the languages.

The Advanced requirements will occupy a fourth year of daily recitations. At the end of this course the student should be able:

(1) To read at sight any standard author not earlier than the seventeenth century; (2) to write in French or Spanish a short essay on some simple subject connected with the works read; (3) to translate correctly a passage of modern English prose; (4) to carry on a simple conversation in French or Spanish; (5) to follow a lecture in French or Spanish.

The reading in the Elementary course should cover from four hundred to six hundred duodecimo pages; in the Intermediate course a similar amount should be read of prose and verse, a portion to be in the dramatic form; and in the Advanced course the same quantity of prose and verse should be selected from standard authors not earlier than the seventeenth century, and these should be read with reference to their literary value.

The practice of writing compositions consisting in reproductions or paraphrases of the matter read should be begun in the Intermediate course and followed by short themes along similar lines in the Advanced course.

7. German.—The elementary study of the language, covering two years of daily recitations, should include the following requirements:

The ability to read understandingly easy German prose and verse at sight; an accurate knowledge of the most important elements of grammar, embracing especially inflections, word-order, and the essentials of syntax, as also the ability to appreciate the force of prefixes and suffixes; the ability to express in correct German simple ideas concerning familiar things; the ability to make oral use of the German

learned and to recognize German words and simple sentences when spoken. Careful attention should be given to pronunciation and accentuation, in order to insure the power to read German fluently and intelligently.

This preparation is represented, approximately, *in reading,* by material of the character of Thomas and Hervey's Reader, and the careful study of one or more modern dramas (about two hundred duodecimo pages of easy German), supplemented by the reading of German lyrics and ballads, a number of which should be memorized; *in composition,* by daily practice in reproducing in one form or another the German read and in writing in German.

Intermediate German represents a third year of daily recitations covering the following requirements:

The ability to read intelligently ordinary German prose and verse at sight; some knowledge of word-formation and derivation; practical familiarity with the principles of syntax, with special reference to the uses of the tenses and cases, the modal auxiliaries, and the moods; increased ability to write and speak German.

It is believed that this preparation can be acquired by continued practice such as is suggested above, in connection with the careful reading of five hundred duodecimo pages of contemporary and classical prose and verse, in addition to the reading required for Elementary German. It is recommended that about one-half of this reading be selected from the works of living or recent writers, such as Otto Ernst, Storm, Keller, Freytag, etc.; and the other half from such classics as Lessing's Minna von Barnhelm, Schiller's Wilhelm Tell, and Goethe's Wahrheit und Dichtung. Particular attention should be paid to the literary value of the works read. It is also desirable that candidates should acquire the ability to understand and take part in a recitation conducted in German.

Advanced German represents a fourth year covering, in addition to the preparation in Elementary and Intermediate German, the following requirements: A firmer hold on the important elements of German Grammar; a thorough knowledge of at least two of the following classics: Goethe's Hermann und Dorothea or his Iphigenia, Lessing's Nathan der Weise, and Schiller's Wallenstein, as well as of two or more recent dramas, all of which should be studied as much as possible with an eye to the appreciation of their literary value; some familiarity with the technical language of literature and science; the ability to compose in German with ease and to follow lectures delivered in German.

8. Latin.—The reading required in elementary and advanced Latin (4 units), without regard to the prescription of particular authors and works, is not less *in amount* than Caesar, Gallic War, I-IV; Cicero, the orations against Catiline, for the Manilian Law, and for Archias; Virgil, Aeneid, I-VI.

An equivalent amount of reading from authors other than these specified above may be substituted. The following are suggested: Caesar, Civil War; Eutropius; Nepos; Terence, Phormio; Cicero, Letters; Sallust; Virgil, Bucolics and Georgics; Ovid, Metamorphoses.

Exercises in translation at sight should begin in school with the first lessons in which Latin sentences of any length occur, and should continue throughout the course with sufficient frequency to insure correct methods of work on the part of the student. From the outset particular attention should be given to developing the ability to take in the meaning of each word—and so, gradually, of the whole sentence—as it stands; the sentence should be read and understood in the order of the original, with full appreciation of the force of each word as it comes, so far as this can be known or inferred from that which has preceded and from the form and position of the word itself. The habit of reading in this way should be encouraged and cultivated as the best preparation for all the translating that the student has to do. No translation, however, should be a mechanical metaphrase. Nor should it be a mere loose paraphrase. The full meaning of the passage to be translated, gathered in the way described above, should finally be expressed in clear and natural English.

The school work in Latin should include much reading aloud, writing from dictation, and translation from the teacher's reading. Learning suitable passages by heart is also very useful, and should be practiced.

The work in composition should give the student a better understanding of the Latin he is reading at the time, if it is prose, and greater facility in reading. It is desirable, however, that there should be systematic and regular work in composition during the time in which poetry is read as well; for this work the prose authors already studied should be used as models.

9. Greek.—In Elementary Greek (2 units) the following requirements should be covered: Grammar, the inflections and the essential points of syntax; Xenophon's Anabasis, Books I-IV, or an equivalent; prose composition. It is expected of every pupil that he be able to read Greek aloud without stumbling.

In Advanced Greek (1 unit): Homer, Iliad, Books I-III, or an equivalent; advanced prose composition. The pupil should have a good acquaintance with the forms and syntax of Homer, and be able to scan any given passage exactly and to read it rhythmically. In the writing of Greek the pupil should have a year's training beyond that required in Elementary Greek.

10. Drawing and Applied Art.—In each of the drawing subjects (Freehand, Mechanical, and Architectural) a unit of credit represents daily double periods for a year or single periods for two years.

In Freehand Drawing approximately two-thirds of the time should be given to representation and one-third to decorative and constructive design. *Representation* should include: object drawing, boxes, books, bowls, vegetables, machine parts, drawn in various positions with attention to perspective facts in line and also to light and shade; plant forms, seed pods, shells, insects, animals, and simple landscape, drawn in line, in light and shade, and in color; composition, exercises in arrangement and adaptation of pictorial subjects into good composition, using both rhythmic line arrangement and harmonious color. The style of drawing should be direct, facile and effective, adapted to the thing drawn, with refinement in its proper place and vigor in its proper place. The pupil should be equally familiar with the use of pencil and charcoal or brush. *Design* should include (1) Exercises in space filling, borders and all-over patterns with use of geometric and organic forms. (2) Principles of constructive and decorative design applied to simple objects, as: in printing, a title-page or program; in textiles, a stencil or embroidery design for a curtain or table-scarf; in wood, working drawings for a chair, table, clock-case, book-rack, etc.; in metal, cabinet hardware and lighting fixtures, etc. Talks supplemented by photographs of the best paintings and architecture, and talks upon taste in home furnishing and appointments, with visits to worthy examples, should supplement the course, with a view to developing an enlightened taste in art.

In Mechanical Drawing the pupil is expected to acquire neatness and accuracy in the use of drawing instruments. His course should include practice in line work, lettering, machine or architectural working drawings, and tracing. Recognition, commensurate with the length of course and the degree of proficiency attained in the use of instruments, will be given, however, to courses consisting of line work, lettering, and the construction of geometric figures.

11. Shopwork.—Two things are expected: First, a knowledge of the materials and tools used, and a thorough understanding of the

principles involved in the operation performed; second, manual dexterity, as evidenced by neatness, accuracy, and despatch in the execution of a given piece of work.

Woodworking (½ unit) demands the ability to recognize the common varieties of wood, and some knowledge of their physical properties, such as ease of working, strength, toughness, hardness, etc., is expected. The pupil should be familiar with the uses of the principal hand tools of carpentry and with their care, be able to make the ordinary kinds of joints and splices, and be familiar with the operation of the lathe, jig-, band-, and circular-saws, and planing machines.

Forge Work (½ unit) demands an elementary knowledge of the properties of wrought iron and steel, and of the proper heats at which to work them. The management of forge and fire and the nature and uses of all the ordinary blacksmithing tools should be known. The pupil should be able to execute all of the common forging processes, including the various forms of welds in iron and steel; he is also expected to understand hardening, tempering, and annealing.

Foundry Work (½ unit) demands a knowledge of the tools and processes used in the ordinary forms of green sand moulding and core work. The pupil should have had experience in the operation of the cupola and know how to charge and operate it. He should have a knowledge of the properties of cast iron, and experience in pouring cast iron as well as in moulding.

Machine Shop Work (½ to 1 unit) demands a knowledge of the tools and processes used in the working of iron, steel, and brass. The pupil should be able to execute all forms of vice-work, such as chipping, filing, scraping, fitting, and finishing. He should be familiar, through experience in operation, with the simpler forms of machine tools, such as the lathe, drilling machine, planer, shaper, and milling machine.

12-15.—In Agriculture, Horticulture, Domestic Science, Commercial Subjects, and Music the outline prepared by the University of California is suggested; also, in Music, the definition given by the College Entrance Examination Board.

II. SPECIAL STUDENTS

Persons under twenty-one years of age will not be received as special students.

The privileges extended to special students are not intended for those who come directly from the schools, with insufficient preparation for regular standing, but for those who are qualified by age, character,

practical experience, and habits of study to profit by university courses. (On account of the limitation upon the number of women students, women are not admitted as special students.)

Special students are subject to the same University regulations as regular undergraduates, and they may become candidates for graduation upon fulfilling all University requirements (see p. 58).

Blank applications for admission as special students may be obtained from the Registrar.

Special Workers

Physicians and others who are properly qualified but not candidates for a degree, may be admitted to work in the Department of Medicine with the permission of the Executive Head of the Department and of the professor or professors concerned. Such persons shall be listed as Special Workers.

III. ADVANCED STANDING

Students from other institutions of recognized collegiate rank, who present satisfactory credentials, may be admitted to such standing and upon such terms as the Faculty may deem equitable. Students from institutions of equivalent rank, who maintain a satisfactory record after admission, may expect to receive the same standing as at the former institution, except that no such student can be given more than three years' advanced credit (ninety unit-hours toward graduation), and that differences in standard of entrance preparation will be taken account of. Every candidate must present a full certified transcript of his college record, including entrance credit, and a letter of honorable dismissal. Women with less than two years of college standing must make formal application in advance on blanks to be furnished by the Registrar (see p. 53-54).

Recommended graduates of approved State Normal Schools where the normal training has been preceded by a full four years' high school course, or where high school and normal school course together cover six years' work, may ordinarily be granted an advanced credit of thirty units.

Blank applications for admission to advanced standing may be obtained from the Registrar.

All applications for advanced standing on the basis of work done before entering the University must be filed within two years after matriculation; and such applications will not be received at a later date.

IV. GRADUATE STANDING

Graduates of institutions of recognized collegiate rank may be admitted to graduate standing in the University upon presentation of diplomas or equivalent credentials. Admission to technical graduate standing does not imply admission to candidacy for an advanced degree (for the conditions of such candidacy see p. 67.) If graduates of other universities desire to become candidates for the baccalaureate degree, the question of units required for graduation may be waived, upon approval of the Committee on Admission and Advanced Standing, and the degree conferred on the satisfactory completion of not less than thirty units of University work and the fulfillment of all major and minor requirements. Graduate students not candidates for any degree, may be permitted, upon the approval of the major department, to undertake such work as their previous training seems to warrant.

Special Regulations Governing Admission of Women

The Founding Grant of the University, as amended May 31, 1899, directs "that the number of women attending the University as students shall at no time ever exceed five hundred." In conforming to this provision the following plan of admission has been adopted.

Graduates of other universities and candidates who have completed at least two full years in a college or university of recognized standing, will be admitted without previous application, provided they present themselves for matriculation upon the regular registration days. Women once admitted to the University will be allowed to continue without further application, so long as scholarship and conduct are satisfactory, and provided they present themselves for registration on the regularly appointed days. Places will not be held for women after the regular registration days, except by permission of the Committee on Registration granted in advance.

For candidates with less than two full years of college credit the plan of admission is as follows:

Applications may be made at any time. They must state the proposed time of entrance and the credentials which the candidate expects to offer. To insure consideration, applications made more than ten months before the proposed date of matriculation must be renewed (by written notice or new application) some time during the ten months immediately preceding the proposed date of matriculation. Blanks for application may be obtained of the Registrar.

Numbered lists will be begun July 10th (for the August-September matriculation), and October 10th (for the January matriculation). All candidates whose credentials are complete and in the hands of the Registrar on the dates specified will be given numbered admission cards in the order of original application. After the first lists are made up, additional numbered cards will be issued in the order in which complete credentials are received, the order of original application applying where the complete credentials of more than one candidate are received on the same date.

Early application is important—preferably a year or more in advance of the proposed date of matriculation. But unless complete credentials follow so as to be in the hands of the Registrar on the dates specified (July 10th, October 10th) the advantage of early application will be lost.

Complete credentials comprise: *For first-year standing,* (1) formal application, (2) fifteen accepted entrance units; *for advanced standing,* (1) formal application, (2) full certified transcript of college record, including entrance credits, (3) letter of honorable dismissal. (Formal application is waived in the case of candidates with full junior standing.)

On registration day candidates will be preferred in their serial order. After registration day the serial order of candidates actually present will be observed.

Candidates receiving numbered cards for a given date, but not matriculating at that time, may be transferred to any succeeding list, in their serial order, by giving due notice to the Registrar (before October 10th, or July 10th, as the case may be).

UNIVERSITY RESIDENCE

Registration

On the appointed Registration Days, in August and January, each student must obtain a certificate of registration *in person,* at the Registrar's office.

Matriculated students may register after the appointed Registration Days and during registration week, upon payment of a special fee of two dollars; during the week following the fee for late registration will be four dollars; after that the fee will be increased one dollar for each week's delay. Registration of undergraduates and specials will not be permitted later than one month after the beginning of instruction.

Study Card

At the Registrar's office the student receives a card for selection of studies for the semester. This card, properly filled out, and approved by the major department, must be filed with the Registrar at the time of Registration; but late study cards will be accepted upon payment of a special fee of two dollars. Students registering late are admitted to particular classes only by permission of the instructors concerned. All work for which University credit is desired must be duly registered.

Enrollment in Classes

A student desiring to enter any class must present his certificate of registration to the instructor for enrollment at the beginning of each semester. Whether the student is qualified for enrollment in a particular class is a question to be decided by the instructor in charge. In general, the prerequisites for taking any given course are noted under "Courses of Instruction."

Change of Studies

A student desiring to drop a subject once taken up, or to take up a new subject after the study card has been filed, must present to the Committee on Registration a petition for such change, approved by the major department and by the instructors whose subjects are to be taken or dropped. In general, petitions so approved, if they do not give the student too many unit-hours, or too few unit-hours, and if presented within three weeks after the beginning

of the semester, are granted without question. If presented at a later time in the semester they will be granted only for extraordinary reasons, and where the taking up of new subjects is involved, only on payment of a special fee of two dollars for each course; if otherwise acceptable but presented after the close of the semester, they will be granted only on payment of a special fee of four dollars for each course. In the case of petitions to drop subjects during the last six weeks of the semester, action will be deferred until the close of the semester.

Change of Major Subject

Petitions to change the major subject will be granted when approved by the departments in charge of both the old and the new subjects, the student being held to all the requirements of the new major subject. (First-year students may change their major subject at the end of the first or second semester without petition.) In general, the major subject may be changed at the end of the first year, and in some cases later, without appreciable loss of time to the student.

Amount of Work

Fifteen hours per week of recitations or lectures or an equivalent in laboratory work, constitutes an average semester's work. In general, students may register for as few as *thirteen* or as many as *eighteen* unit-hours; but in the case of students doing outside work for self-support or otherwise, and where considerations of health are involved, special restrictions will be made upon recommendation of the professor of hygiene; and where conditions or failures have been incurred in the preceding semester, not more than *fifteen* units may be registered unless by special permission of the Committee on Registration granted in advance. Permission to register for less than *thirteen* units may also be granted for special reason; but registration for less than *ten* units will not ordinarily be accepted. Not more than eighteen units may be credited toward graduation for any semester's work, unless, in exceptional cases, permission to register for additional units is granted in advance. Graduate students are not held to any special number of unit-hours, but registration will not ordinarily be permitted unless such students are prepared to devote at least half of their working time to University study. Petitions for irregular registration should be presented at the beginning of the semester.

Every unit for which credit is given is understood to represent approximately, for the average student, three hours of actual work

per week, through one semester. Thus, in lecture or recitation work, for one unit of credit one hour per week may be allotted to to the lecture or recitation and two hours for preparation or subsequent reading and study on the part of the student; but if a less amount of time is allotted for preparation or subsequent reading or study, there shall be a proportionate decrease in the amount of credit. Where the time is wholly occupied with drawing, field, or laboratory work, or in the class-room work of conversation classes, three full hours per week through one semester are expected of the student for each unit of credit; but where such work is supplemented by systematic outside reading or experiment under the direction of the instructor, such a reduction may be made in the actual drawing, field, laboratory, or class-room time as seems just to the department concerned.

Conditions and Failures

A student conditioned in any subject may arrange with the instructor concerned for such supplementary examinations or study as will make good the deficiency; but such deficiency must be removed within one year after the condition is incurred, otherwise the condition will be considered a failure. Work reported as incomplete may be made up during the first or second semester's registration after the incomplete is incurred; but if not made up until the second semester, the incomplete work shall be duly entered on the student's study card and shall count as part of the permitted registration for that semester to the extent of the actual unit-hours required for making up such incomplete work as estimated by the instructors concerned. A student failing in any subject cannot receive credit for the portion in which the failure is incurred until the subject has been re-registered and taken over again in class. A condition or failure or withdrawal from class without permission of the Committee on Registration, limits the student to *fifteen* units the semester following.

Mid-semester reports on scholarship are obtained from all instructors, and students reported as doing unsatisfactory work are notified of their deficiencies. A student whose work is unsatisfactory may be placed on probation at any time. At the middle and at the end of the semester each department shall be notified of all serious deficiencies in scholarship affecting students whose major work is in that department.

A student who receives passing grades in less than half the work for which he is registered during his first semester, or in less than two-thirds during any subsequent semester, shall be deemed to have

failed in his studies. After a first failure, unless unusually serious, a student may, with the approval of the major department, again register in the University, but shall be placed on probation for one semester. A second failure shall result in withdrawal from the University. Work marked "incomplete" will be considered of passing grade only when reported as satisfactory in quality and not seriously deficient in quantity.

A student whose delinquency is unusually serious, or is the result of persistent neglect, may be required to withdraw from the University at any time.

Leave of absence will not generally be granted to a student on probation, nor to any student whose work during the current semester is unsatisfactory, unless applied for at least six weeks before the end of the semester.

A student on probation may not take part in any intercollegiate contest, nor represent the University in any way, whether individually or in connection with any athletic, literary, musical, dramatic, or other organization.

From Special to Regular Standing

Special students may be entered in regular standing and become candidates for graduation, on passing examinations in the required number of entrance subjects, provided such examinations are passed not later than two years after matriculation. In place of entrance examinations, university work to the amount of five units for each entrance deficiency may be offered in university subjects which are also included in the entrance group.

A special student who has completed one hundred and fifty units of university work, including all major requirements, and whose general university record is deemed proof of superior scholarship, may become a candidate for graduation on approval of the Committee on Admission and Advanced Standing. Petitions to this end will not be considered by the Committee until after the student has completed one hundred and twenty units of university work.

University Credit for Extra Entrance Subjects

Credit toward graduation may be given for entrance subjects in excess of the number required for admission, provided such extra entrance subjects are also university subjects, and are successfully continued in the University within two years after matriculation, and provided the student's general University record is deemed proof of superior scholarship. In general, three units of advanced

credit will be granted for each extra entrance unit representing elementary work in a given subject, and five units of advanced credit for each extra entrance unit representing advanced work. Application for such university credit must be made within two years after matriculation. After matriculation additional entrance units may be offered only for the purpose of making up entrance deficiencies.

University Credit for Special Courses

Matriculated students on leave of absence may take work in other universities, usually without any restriction other than those imposed by the institution in question. But work undertaken in any Summer Session may be subject to special regulations, and must be approved by the major department and by the department in which the work is to be taken.

Work of a special character taken outside of regularly scheduled classes, *in absentia* or during summer vacations, may be credited under the following conditions: (1) The work must be acceptable as part of the major requirements for the A. B. degree in the department by which it is authorized, must be authorized by the department faculty concerned, as well as by the instructor under whom it is to be carried on, must be given adequate supervision and direction and subjected to the same tests as in the case of regularly scheduled courses, and must be duly registered with the approval of the Committee on Admission and Advanced Standing; if not registered in advance, a fee of two dollars will be charged for late registration; (2) Such work may not be offered to cover deficiencies due to poor scholarship; (3) a fee to the University of two dollars per semester unit must be paid before credit is entered.

The last semester's work of every candidate for a degree must be taken in this University; but in special cases, students who have obtained at least ninety units in resident work and who have completed all major department requirements may be exempted from this regulation and permitted to register for special courses under the provisions noted above.

Advanced Standing

Advanced standing for work done before matriculation will generally be given only when certified as having been completed in some institution of recognized collegiate rank, except as provided above for extra entrance units, or, in particular cases, to recommended graduates of approved State Normal Schools (see p. 52). But in special cases permission may be given by the Faculty to receive

credit on examination for work equivalent to regular University courses. Application for such examinations, with satisfactory evidence of the work accomplished, must be presented to the Committee on Advanced Standing. Applications for advanced standing on the basis of the work done before entering the University must be made within two years after matriculation.

Leave of Absence

A student desiring to leave the University for a brief time should apply to the Committee on Registration. If leave of absence is desired on account of sickness, the petition must be indorsed by the professor of hygiene. A leave of absence is merely a justification of the absence and not a relief from the work that has been missed. A leave of absence is usually necessary only in case of interrupted work; a student in good standing absent one or more semesters may re-enter at the beginning of any semester without formal petition.

Honorable Dismissal

An honorable dismissal means that the student is permitted voluntarily to withdraw from the University and is commended to the favorable consideration of any institution he may wish to enter. An honorable dismissal may be granted upon written application to any student not under discipline for misconduct.

Conduct of Students

In the government of the University the largest liberty consistent with good work and good order is allowed. Students are expected to show both within and without the University such respect for order, morality, personal honor, and the rights of others as is demanded of good citizens. Failure to do this will be sufficient cause for removal from the University.

In 1908 the Board of Trustees of the University provided that in all future rentals or leases of houses as fraternity chapter houses it shall be expressly stipulated that no intoxicating liquors of whatever kind shall ever be sold or used on the premises. The Trustees also by formal resolution requested the Academic Council to prohibit the use of liquor in fraternity chapter houses, student club houses, and other student lodgings.

This action of the Board of Trustees is in harmony with the instructions given by the Academic Council to its Committee on Student Affairs, and defines the policy of the University. Prohibition of the use of liquor extends to all student lodgings whether on the campus

or elsewhere. The University assumes that the act of registering as a student implies full acceptance of this policy.

Tuition and Incidental Fees

The Constitution of the State of California, as amended November 6, 1900, authorizes the Legislature, under certain conditions, to exempt the property of the University from taxation, provided residents of California are charged no fees for tuition unless such fees shall be authorized by the Legislature. An Act of the Legislature, approved February 14, 1901, "exempting from taxation a portion of the property held in trust for the benefit of the Leland Stanford Junior University," as amended in March, 1907, provides "that while this Act is in force no fees shall be charged residents of this State for tuition, except that such fees may be charged in professional and engineering courses, but no such fees shall be charged to any student who is registered in any such courses when this Act takes effect."

Tuition Fees are charged in Law, for professional law courses, as follows: for students registering for thirteen or more units in law in any semester, *twenty-five dollars* per semester; for students registering for less than thirteen units in law for any semester, *two dollars* per unit per semester. The tuition fee in Law will be increased to *fifty dollars* per semester, beginning with the academic year 1913-14.

The Tuition Fee in the Department of Medicine is *one hundred and fifty dollars* per year.

An Incidental Fee of *fifteen dollars* per semester is charged to all registered students with the following exceptions: (1) Those registered in the professional courses of Law and Medicine, paying tuition fees in those departments amounting to fifteen dollars or more per semester; (2) graduate students accepted as candidates for an advanced degree.

Students in laboratory courses pay for the materials which they use, and in various courses syllabus and other fees may be charged. Laboratory and syllabus fees are different for the different courses, ranging from *fifty cents* to *twenty-five dollars* per semester.

Laboratory fees are ordinarily returnable as follows when duly claimed in writing within two months after the date of withdrawal from the University: thus, the whole amount will be refunded when the student withdraws within one week of the beginning of a semester, and one-half the amount if the student withdraws before the middle of a semester; but no fees will be refunded on account of withdrawals after the middle of a semester, nor unless claimed in writing within two months after the date of withdrawal. (This regulation is not applicable to the Department of Chemistry.)

A diploma fee of *five dollars*, payable before Commencement in May, is charged all persons receiving degrees from the University.

Cost of Living

The cost of living in Roble Hall, including, board, room, light, heat, and attendance, averages about twenty-seven dollars per month. Students furnish their own linen, blankets, and towels. Requests for reservation of rooms should be made to the Matron of Roble Hall.

Rooms in Encina Hall, furnished similarly to those in Roble Hall, but without board, cost from $6.00 to $6.50 per month, with two in a room. There are a few single rooms at $8.00 per month. Students occupying a double room alone pay the full price of the room. Each double room is furnished with two single beds. Requests for reservation of rooms should be made to the Clerk of Encina Hall.

Students may live outside the Halls only in places approved by the University.

In Palo Alto and College Terrace, at an average distance of a mile and a quarter from the University, rooms and board, in private houses, can be obtained, at from twenty-five to thirty dollars per month. A considerable number of students live in co-operative clubs, in which the cost of board and room is reduced as low as eighteen dollars per month; such rooms are lighted and heated, but usually unfurnished. Special commutation tickets are issued by the Southern Pacific Company, and students living in towns on the line of the railway, from San Francisco to San Jose, easily go to and from the University daily. There is also trolley connection with San Jose, Los Gatos, and intermediate towns.

On arriving at the University, new students may obtain information of rooms and board at the Information Bureau conducted by the Christian Associations. A complete list of approved rooms and boarding places is printed in August. Particular inquiries may be addressed to the secretaries of the Christian Associations.

The University Inn, located near the Quadrangle, has dining accommodations for about three hundred students.

Books and stationery will average from eighteen to twenty-five dollars per year.

The necessary expenses of the student, exclusive of clothing and railway fares and of tuition fees in Law and Medicine, range from $300 to $450 per year.

The cost of living for students of Medicine in San Francisco is about the same as at Stanford University. There are numerous rooming and boarding houses near the medical buildings.

Self-Support of Students

A considerable number of students manage, in one way or another, to earn the whole or a part of their expenses while attending the University. Such opportunities occur in the line of office and laboratory assistance, personal services of numerous kinds, the management of various student enterprises, agencies for laundries, etc.

The Students Employment Bureau (in charge of the Christian Associations) registers without charge all students who apply for employment, and supplies employers with student labor as demanded. In general, the demand and supply are nearly equal, but the attention of new students who intend to earn the whole or part of their living is called to the following results of past experience:

1. There is a constant *over-supply* of those wishing to do teaching and clerical work. None but those having superior qualifications and experience are likely to secure employment the first semester.

2. There is a considerable demand for efficient stenographers, also for men and especially women students who can do domestic labor of any kind; board and room rent may be earned by waiting on table, washing dishes, general housework, house cleaning, gardening, etc.

3. Students who can do any kind of domestic or manual labor *well,* and who have thoroughly good health, can earn their board by three hours' work per day, or board and room by four hours' work per day. Those who are bookbinders, printers, mechanics, or carpenters, will have a decided advantage in obtaining employment. *But no student should come to the University without resources sufficient for the expenses of one semester.*

4. The University curriculum is adapted to those who have control of their entire time for study. The student who must earn his living, therefore, should expect to take less than the usual amount of University work.

5. No student should come expecting to earn money, who can do nothing well; skill is absolutely essential, as competition is quite as severe in the college community as elsewhere.

6. Opportunities for earning money during the summer vacations can usually be counted on, the demand for canvassers being most constant.

Particular inquiries concerning opportunities for self-support should be addressed to the Secretaries of the Y. M. C. A. or Y. W. C. A. Upon arrival at the University new students should report for registration and information to the Information Bureau of the Associations.

University Health Control

The University exercises an advisory control over student health affairs through the Committee on Public Health.

Every student upon entering the University is required to report for a brief medical examination. General health, eyesight, hearing, and evidence of effective vaccination are the important factors in the examination. Any condition which may place a limitation on the amount or kind of work planned by the student is discussed with him or made the subject of a report to his major department or to the Committee on Registration.

Students intending to train for any of the athletic teams, or to register for gymnasium work, are required to pass a careful physical and medical examination at the beginning of each semester.

A careful inspection of all boarding and rooming houses in the community is carried on under the supervision of the Public Health Committee, and only those are permitted to register who arrange to live in houses which have been approved.

Regulations concerning Vaccination.—(1) Each student will be required to present, for purposes of record, a dated statement, signed by a physician in good standing, certifying to his or her last successful vaccination. Such certificates will be returned, upon request, after incorporation into the University records. Inspection of the scar by the University authorities may be required. (2) A history of previous vaccinations is requested, but need not be in the form of a signed certificate. (3) Revaccination will be required of all those not successfully vaccinated within seven years. (4) Unsuccessful vaccination must be followed by a second trial within two weeks. (5) Should the disease at any time appear at or in the vicinity of the University, vaccination must be performed immediately on all those directly exposed who have not been successfully vaccinated within one year. Should the disease become prevalent, vaccination of all members of the University community not successfully vaccinated within one year, must be performed.

Students' Guild

The Guild is a student organization which seeks to make provision for the care of all cases of serious illness among its members. This is now accomplished for non-contagious diseases, through an arrangement with the Peninsula Hospital of Palo Alto. For the care of contagious diseases, provision has been made by the erection of a Detention Hospital on the University Campus.

All students are required to become members of the Guild by paying the fee, which is two dollars each semester. A uniform hospital rate of one dollar per day is charged all members of the Guild, in addition to such special charges as may be incurred for extra service.

The officers of the Guild for 1912-13 are as follows: President, Herbert Eustice White, '11; Vice-President, Florence Edetha Dunlop, '13: Secretary, George Harvey Murray, '14; Treasurer, Wilbur Ray Chandler, '13; Director, William Homer Moore, '15; Faculty Directors, Professors Zinsser, Mitchell, and Stoltenberg.

GRADUATION

Candidates may present themselves for graduation in January, May, and September.

No degree will be conferred upon any person who has not spent at least one year in resident study at the University. No honorary degrees are given.

Bachelor of Arts

The degree of Bachelor of Arts (A. B.) is conferred upon candidates who have satisfactorily completed a total of one hundred and twenty units of University work and who have also satisfied the requirements in major and minor subjects.

Thirty units constitute a normal year's work (see p. 56), but the ordinary class divisions (freshman, sophomore, junior, senior) are not recognized by the University. The degree is conferred whenever the requirements are met, without regard to the time spent, except that at least thirty units (including, except in special cases, the last fifteen) must be completed in this University.

Each student selects as a Major Subject the work of some one Department. The Major Department has the authority to prescribe not more than forty units in the Major Subject (exclusive of elementary courses in the Major Department which may be offered for entrance). The Major Department shall also recommend such other courses as it may consider desirable, and shall exercise an advisory supervision over the student's entire curriculum from semester to semester. Major Department supervision of the student's study lists shall be administered in the spirit of the major subject system, which is to provide the inexperienced student with necessary advice and direction while developing his power of initiative, and to accord to the mature student larger and larger responsibility in planning his own curriculum. It shall be considered a general principle of university policy, to be departed from only in exceptional cases, that at least sixty of the one hundred and twenty units required for the degree be taken outside of the Major Department.

In applied science the Major Department may prescribe so much of the entire one hundred and twenty units as it shall deem essential to the technical or professional requirements of the major subject.

A course in English Composition (English A) is prescribed for first-year undergraduates who do not satisfy the matriculation test.

Within these limitations the work in all departments is elective, and the student may freely choose any course which his previous studies have prepared him to undertake.

The recommendation of the Major Department is necessary to graduation.

(A student in regular undergraduate standing who does not intend to become a candidate for the A. B. degree, may choose, with the approval of the major department, any courses in the University which his previous training has prepared him to undertake.)

Bachelor of Laws

The degree of Bachelor of Laws (LL. B.) is conferred upon candidates who have satisfactorily completed two years (sixty units) of non-professional study in the pre-legal curriculum and three years of professional study in the law school.

Candidacy for Advanced Degrees

Candidates must be registered in the University and must file a statement of their candidacy with the Registrar. The approval of a programme of study by the Department Faculty concerned and by the Committee on Graduate Study constitutes formal admission to candidacy. Only under exceptional circumstances will a programme of work be approved which is received later than the beginning of the academic year in which the degree is to be taken. It is advisable that such programme be filed as early as possible in the student's course. No advanced degree will be conferred except upon the recommendation of the Committee on Graduate Study.

Master of Arts

The degree of Master of Arts (A. M.) is conferred on graduates of this University, and on others who have had an equivalent training elsewhere, upon the satisfactory completion in residence, of one year of work beyond the baccalaureate requirements of the department in which the degree is sought, and upon the presentation of an approved thesis, and the passing of such general or final examination as the major department may require. A longer period of residence will be required of candidates who are inadequately prepared or who devote less than the normal amount of time to their graduate course. Work may be done in connection with the regular courses of instruction or, as research, independently of them. The programme of study must form a consistent plan of work pursued with some definite aim, whether it lies wholly in a single department or field of study, or in more than

one. At least two-thirds of a year's work must be devoted to advanced or graduate work in the major study or in intimately allied subjects.

Special regulations are:

1. A report upon the character of the work done shall be made by each instructor under whom a candidate is registered.

2. A candidate for the degree of Master of Arts must display ability to do independent work.

3. The Master's thesis, bearing the approval of the instructor under whose supervision it was prepared, must be submitted to the Committee on Graduate Study by the date on which instruction closes for the semester in which the degree is taken; upon acceptance, it shall be suitably bound and placed in the University Library.

Engineer

In the department of applied science the professional degree of Engineer is conferred on graduates of this University, and on others who have had an equivalent training elsewhere, upon the satisfactory completion, in residence, of one year of professional study beyond the baccalaureate requirements of the department in which the degree is sought, and upon the presentation of an approved thesis, showing ability to do independent work. The special regulations stated above for the degree of Master of Arts apply also to the degree of Engineer.

Juris Doctor

The degree of Juris Doctor (J. D.) is conferred on students who have previously received the academic degree of Bachelor of Arts, or an equivalent degree elsewhere, upon the completion of the three years' professional law course. The first year of the professional law course may be taken by candidates for the A. B. degree.

Doctor of Medicine

The degree of Doctor of Medicine (M. D.) is conferred on students who complete the four years' course in Medicine based upon a three years' pre-medical course as laid down by the University.

Doctor of Philosophy

The degree of Doctor of Philosophy (Ph. D.) is conferred on graduates of this University, and on others who have had an equivalent training elsewhere, upon the satisfactory completion of at least three years of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, under the following conditions:

1. At least the last year of study must be spent in residence at this University.

2. At least one year prior to the date when the degree is sought, the candidate must show a reading knowledge of French and German in his special literature. The faculty of the department in which the major work is taken determines whether this requirement has been met.

3. The programme of study must include one major subject and one or two minors. The minor subject or subjects shall represent approximately one-third of the programme of study; except that such minor subjects may be waived upon the recommendation of the major subject department, if approved by the Committee on Graduate Study, when the breadth and extent of the candidate's training justify such a course,—in which case the candidate will be expected to show such breadth of training in his oral examination.

4. The candidate must present a thesis at least six weeks before the close of the semester in which the degree is sought, in form and content acceptable to his department and to the Committee on Graduate Study. He must guarantee the printing of the thesis within one year after the degree is conferred and the deposit of one hundred copies in the Library.

5. In addition to satisfying the requirements of major and minor departments, the candidate must submit to an oral test or examination by a special examining committee of the Faculty and in the presence of such other members of the Faculty as care to attend. The special examining committee consists of (1) the professors of the major-subject department with the executive head of that department acting as chairman, (2) the one or more professors in charge of the minor subject or subjects, (3) two members of the Committee on Graduate Study whose departments lie nearest that of the major professor, and (4) the Chairman of the Committee on Graduate Study, acting as its secretary. The Committee may at its discretion invite other members of the Faculty to participate in the oral examination.

Advanced Degrees in the Medical Department

The Divisions of the Medical Department are considered as equivalent to other departments of the University in respect to candidacy and requirements for the degrees of Master of Arts and Doctor of Philosophy, and all the foregoing regulations apply to these divisions and division faculties as to departments and department faculties, with the following modifications and limitations:

1. Candidates for these degrees must have received the degree of A. B. at Stanford, or an equivalent degree elsewhere, and must have

completed all requirements for admission to the Department of Medicine, and such other requirements as each division faculty may prescribe.

2. Time spent in candidacy for the degree of Master of Arts or Doctor of Philosophy will not be counted toward the degree of Doctor of Medicine.

3. Candidates for these degrees in the divisions of Medicine, Surgery, and Obstetrics and Gynecology, must have received the degree of Doctor of Medicine.

The High School Teacher's Certificate

County, and City and County Boards of Education are authorized to grant High School Certificates (under Sections 1521, 1775, and 1792 of the Political Code of California) to candidates recommended by the University as having fulfilled the requirements laid down by the State Board of Education, and provided the institutions concerned "shall each certify to the high character of the work accomplished under its direction, and to the personal fitness of the candidate."

The requirements laid down by the State Board of Education will be met by accomplishing the work outlined in either of the following groups:

Group I

1. Graduation from a college requiring not less than eight years of high school and college training.

2. One year of graduate study in a university accredited by the California State Board of Education, part of the time at least being devoted to one or more of the subjects taught in the high school.

(The "year of graduate study" at Stanford will be fulfilled (*a*) when the candidate has received the degree of Master of Arts, or (*b*) when the candidate has completed twenty-six units of university work (four of which may be the practice teaching named below). At least one advanced or graduate course in the major department of not less than four units, must be taken.

3. Eight hours per week for one-half school year in the Department of Education, taken as a part of either the graduate or undergraduate course.

4. Practical teaching, equivalent to at least four hours per week for one-half school year, in a well-equipped school of secondary grade directed by the Department of Education of any of the accredited universities, or in a school of grammar or secondary grade in connection with a California State Normal School, or under the direction of the Department of Education of the University of California, or of the Leland Stanford Junior University.

Group II

1. Graduation from a college requiring not less than eight years of high school and college training.

2. One-half year of graduate study in a university accredited by the California State Board of Education, part of the time at least being devoted to one or more of the subjects taught in the high school.

(The "half year of graduate study" at Stanford will be interpreted as thirteen units of university work, including one advanced or graduate course in the major department of not less than two units.)

3. (*a*) Graduation from a California State Normal School or other normal school officially recognized by the State Board of Education as of equivalent rank, *or* (*b*) twenty months' experience with decided success as a regular teacher or as principal in any reputable school, elementary or secondary; *or* (*c*) six months as student teacher in a well-equipped school of secondary grade directed by a California State Normal School, or its recognized equivalent, or in a school of grammar or secondary grade in connection with a California State Normal, or under the direction of the Department of Education of the University of California, or of the Leland Stanford Junior University.

The University Recommendation

The addition to the technical requirements prescribed by the State Board of Education the University will require, as preliminary to any recommendation for the high school teacher's certificate. the completion of enough work (and of sufficiently high grade), in at least one subject, to secure a Department recommendation that the candidate is fitted to teach the subject in high school classes.

The Department requirements for such recommendation are, in most cases, stated in the Register under the Department headings; but each candidate *should find out definitely* from the Departments concerned, not later than the beginning of the Senior year, preferably earlier, the particular requirements which must be met.

It is advisable that every candidate for the teacher's recommendation should endeavor to fulfil the Department requirements in at least *two* high school subjects.

For information on advice as to possible and desirable combinations of subjects for high school positions, students are invited

to consult the Appointment Secretary as early in their course as possible.

The Grammar School Teacher's Certificate

Under Section 1775 of the Political Code of California, as amended March, 1909, County Boards of Education are authorized to grant, without examination, grammar school certificates "to holders of diplomas of graduation of the four-year course of the University of California or Leland Stanford Junior University when said holder of such diploma shall have had six months' training in one of the State Normal Schools of this State or has had eight months' successful experience in teaching in the public schools of California after graduation."

Under Section 1543 of the Political Code of California, as amended March, 1909, County Superintendents of Schools are authorized "to issue temporary elementary certificates valid for two years to graduates of the University of California and to graduates of the Leland Stanford Junior University"; but "no person shall be entitled to receive a temporary certificate more than once in the same county."

Appointment Registry

The University endeavors (1) to keep a record of students and graduates who wish to teach, or to be transferred to other teaching positions, and (2) upon application of school and college officials, to recommend for suitable vacancies such candidates as seem most likely to succeed.

The University aims to obtain complete information with regard to the scholarship, experience, and personal qualifications of each candidate, and reports from instructors and others concerning the fitness of candidates are filed in the office of the Appointment Secretary. Such information is regarded as confidential, and general letters of recommendation are not given. Copies of such credentials as are on file will be mailed to school and college officials, at their request, or at the request of the candidate concerned. But the University reserves the right of refusing to extend its coöperation to students when they apply for positions for which they are manifestly unfit. Official recommendations for positions are made only upon request of those in authority. Letters requesting such recommendations should state explicity the subjects to be taught, the salary to be paid per year, and the time when the engagement is to begin.

While the services of the Office have been called for mainly in connection with school and college positions, there is an increasing number of requests for persons in other types of employment—stenographers, secretaries, librarians, bacteriologists, social and playground workers, and the like. The Office has therefore undertaken to collect information regarding the vocational training and experience of such students as may desire to register with the Committee.

Blanks for registration may be obtained of the Appointment Secretary, at the Registrar's office, and should be filled out each year, preferably during March or April.

Communications should be addressed to the Appointment Secretary, Stanford University, California.

COURSES OF INSTRUCTION

GREEK

Augustus Taber Murray, Professor.
Ernest Whitney Martin, Associate Professor.
Josephine Veronica MacCormac (first semester), Mabel Adella Brekke (second semester), Frances Dorothy Parker, Assistants.

Undergraduate Courses

Instruction in the lower classes is given chiefly by means of recitations, but as the student advances these are supplemented by lectures. In courses 1, 2, 3, 13, and 14 the work is arranged so as to provide as far as possible individual instruction for each student. In this way it has been found possible to read more widely, while at the same time there is a distinct gain in thoroughness.

It will be seen that provision is made for those who have had no Greek before coming to the University.

The Teacher's Recommendation.—Courses 2, 3, 4, 5, and 15 (or equivalents) constitute the minimum requirement for the high school teacher's recommendation in Greek.

1. Elementary.—Grammar; translation of easy prose; Greek composition. After the essential grammatical forms have been mastered, the students are led to read as widely as possible in simple narrative prose, selected from Xenophon's Anabasis, the Gospels, and Cebes' Tablet. The course includes systematic drill in the ordinary forms of syntax, and exercises in writing Greek are regularly introduced.

MTWThF 1:30 3 to 5 units both semesters (Murray)

2. Simple Attic Prose.—Selections from prose writers, adapted to the needs of individual students. Open to those who have offered Greek for entrance, or who have completed course 1 in the university. Students who have completed course 14 may take this course on recommendation of the instructor. In this course each student meets regularly with one of the instructors for direct personal instruction.

MWF 8:15 3 units, 1st semester (Cox)

3. The Odyssey.—A continuation of course 2 similarly conducted.

MWF 8:15 3 units, 2d semester (Cox)

4. Prose Composition.—Systematic training in the writing of simple Greek with exercises in sight translation. Required of Greek major students in connection with courses 2 and 3.

TTh 8:15 2 units, both semesters (MURRAY)

5. Homer.—The reading of large portions of the Iliad, with discussions of Homeric problems from time to time. Open to students who have completed courses 2 and 3, or an equivalent.

MWF 10:15 3 units, 1st semester (MARTIN)

6. Greek Literature.—Representative types, tracing the development of Greek literature, will be read, partly in the original and partly in translation. Lectures will be given from time to time by instructors in the Department.

MWF 10:15 3 units, 2d semester (MARTIN)

7. Advanced Prose Composition.—Further training in the writing of Greek, with exercises in translation at sight supplemented by syntactical studies.

TTh 8:15 2 units, both semesters (MARTIN)

8. Greek Sculpture.—Lectures, illustrated by stereopticon. Not open to first-year students.

TTh 11:15 2 units, 1st semester (FAIRCLOUGH)

9. Demosthenes.—A study of the De Corona.

MWF 11:15 2 units, 1st semester (MARTIN)

10. Thucydides.—The expedition against Sicily, Books VI and VII.

MWF 11:15 3 units, 2d semester (MARTIN)

12. Greek Testament.—The first semester is devoted to the study of the Gospels, with especial reference to the synoptic tradition; the second semester to the study of the letters of Paul.

TTh 11:15 2 units, both semesters (MURRAY)

13. Rapid Reading.—The student and instructor meet weekly for individual reading in easy Greek, suited to the student's particular needs. Open to all who have had at least one semester of Elementary Greek.

By arrangement 1 to 3 units, both semesters (MURRAY, MARTIN, COX, PARKER, BREKKE)

14. Introductory.—An introduction to the study of the Greek language leading up to the reading of easy prose. Simple exercises in the writing of Greek are regularly introduced.

MWF 1:30 3 units, 2d semester (MARTIN)

15. Teachers' Course.—Lectures with practical exercises. [Not given in 1912-13.] 2 units, 2d semester (MURRAY)

16. History of Greece.—A general outline course.
MWF 8:15 3 units, 1st semester (MARTIN)

17. Lyric Poetry.—Selected readings accompanied by lectures.
TTh 11:15 2 units, 2d semester (FAIRCLOUGH)

GRADUATE COURSES

The center of the Graduate work is the Greek Seminary—made up of the director and such students as satisfy him of their fitness for the work. The Seminary meets weekly for the critical interpretation of some Greek author, the different members, in turn, filling the post of interpreter. Topics for investigation are assigned, and papers prepared by the members are read and discussed.

Members of the Seminary are expected to supplement their critical work by wide reading, and lectures on the author or authors under discussion are given by the director. It is in the highest degree desirable that all members of the Seminary should be able to read both French and German, and this is indispensable in the case of those who are working with a view to obtaining the degree of Doctor of Philosophy.

18. The Greek Seminary.—In 1912-13 the Seminary is occupied with the study of the Odyssey.
W 3-4:30 4 to 6 units, both semesters (MURRAY)

19. Rapid Reading.—Graduate and advanced students meet weekly for the reading of the Odyssey and selections from the Iliad.
M 3-4:30 4 units, both semesters (MURRAY)

SPECIAL LECTURES

Throughout the year Professor MURRAY gives lectures, twice weekly, on Greek Epic and Dramatic Poetry. These lectures are intended for general literary students, and do not presuppose a knowledge of Greek; they do not count as part of the major work for students in Greek. The courses are not open to incoming freshmen.

20. The Greek Epic.—
TTh 10:15 2 units, 1st semester (MURRAY)

21. Greek Tragedy.—
TTh 10:15 2 units, 2d semester (MURRAY)

LATIN

Henry Rushton Fairclough, Professor.
Jefferson Elmore, Benjamin Oliver Foster, Associate Professors.
†Philip Arnold Knowlton, Instructor.
Anna Shipley Cox, Acting Instructor.

[With the co-operation of Associate Professor Martin of the Greek Department, and of Professor Hempl of the Department of Germanic Languages.]

Undergraduate Courses

The aim of the undergraduate courses in Latin is to give the student a somewhat systematic knowledge of the language and its development, an acquaintance with the representative authors of Latin literature, and some insight into the life, culture, and civilization of ancient Rome.

The Department recognizes two classes of major students: (1) those who wish to pursue a course of liberal studies, including Latin as a prominent feature; (2) those who, expecting to teach Latin, desire to be properly equipped for that purpose.

Students who wish to qualify for teaching Latin must take courses 2, 4, 5, 6, 7, 8, 9, and 17, together with such other courses as are recommended by the Department. To other students more freedom of choice is allowed.

1a. Introductory.—After a sufficient knowledge of the forms and elements of syntax is acquired the time is devoted mainly to the reading of easy prose. Attention is also given to word formation and the derivation of technical terms. The course is given primarily for scientific and other students who desire at least one year of Latin and for those who wish to begin the subject with a view to further study.

MWF 10:15 3 units, both semesters (Elmore)

1. Virgil and Cicero.—Virgil, selected books of the Æneid; Cicero, selected orations. This course is planned for those who have passed in 1*a* or entrance subject 21*a*.

MWF 11:15 3 units, both semesters (Cox)

2. Terence, Cicero, and Horace.—Terence, Andria; Cicero, De Senectute; Horace, Odes and Epodes; selections from Catullus. Open in either semester to students who have completed course 1, or who have offered entrance subject 21*b*. Two sections.

MWF 8:15, 9:15 3 units, both semesters
(Foster, Elmore, Fairclough)

† Absent on leave, 1912-13.

3. Justinian.—The Institutes of Justinian are read both as a training in language and as an introduction to some conceptions of Roman law. Open to Latin and Pre-Legal majors who have had three years of Latin.

TTh 10:15 2 units, both semesters (Fairclough)

4. Prose Composition I.—Practical exercises and rapid reading of easy prose. Open in either semester to first-year students.

TTh 9:15 2 units, both semesters (Martin, Cox)

5. Horace.—Satires and Epistles. Open to those who have completed course 2 or 3, or an equivalent. Attention is directed especially to the style and subject matter, to Horace's influence on later literature, and to the salient features of the Augustan age.

MWF 10:15 3 units, 1st semester (Fairclough)

6. Livy and Tacitus.—Selections from Livy's History; the Agricola of Tacitus. This course, complementary to course 5, involves a survey of Roman history and the literature of the early empire.

MWF 10:15 3 units, 2d semester (Foster)

7. Prose Composition II.—Open to students who have taken course 4, or an equivalent.

TTh 9:15 2 units, both semesters (Foster, Elmore)

8. Roman Comedy.—The Trinummus and the Rudens of Plautus, and either the Menaechmi or Terence's Hauton Timorumenos. Attention is paid to early forms, constructions, and meters, and to the staging of a Roman play, with some consideration of the later history of comedy.

MWF 8:15 3 units, 1st semester (Foster)

9. The Letters of Cicero.—Selections from the correspondence are read with a view to obtaining a conception of Cicero's character as a man and to becoming acquainted, as far as possible, with the social and political conditions of the time.

TTh 11:15 2 units, 2d semester (Elmore)

10. Pliny.—Selections from the works of the younger Pliny.

MW 11:15 2 units, 1st semester (Cox)

11. Roman Elegy.—The course is devoted chiefly to Tibullus and Propertius.

MWF 11:15 3 units, 2d semester (Foster)

12. Lucretius.—Selections from the De Rerum Natura are read with particular attention to the philosophic thought and its poetic treatment. [Not given in 1912-13.]

3 units, 2d semester (Knowlton)

13. Prose Composition III.—A course for advanced students and prospective teachers. In 1912-13 the work consisted of practice in Latin conversation.

TTh 3:30 2 units, 2d semester (Foster)

14. Juvenal and Martial.—Selections from the Satires of Juvenal and the Epigrams of Martial, with supplementary reading in other writers of the first century.

TTh 9:15 2 units, 1st semester (Elmore)

15. Christian Latin.—Selections from Minucius Felix and other Christian literature will be read. [Not given in 1912-13.]

2 units, 2d semester (Martin)

16. Quintilian.—Book X. Rhetoric and literary criticism among the Romans.

TTh 1:30 2 units, 2d semester (Fairclough)

17. Teachers' Course.—Lectures on methods of teaching Latin, with practical exercises. Open only to advanced students.

M 2:30-4:30 2 units, 1st semester (Elmore)

18. Cicero's Philosophical Works.—Selections from the Tusculan Disputations and the other philosophical works are read with special reference to Cicero's Greek predecessors. [Not given in 1912-13.]

2 units, 2d semester (Knowlton)

19. Roman History from the Sources.—Livy's third decade—the war with Hannibal. Large portions of the text will be read in class; other parts will be assigned for private reading and report. [Not given in 1912-13.] 3 units, 2d semester (Foster)

Graduate Courses

These courses are open to graduates in Latin who have had at least two years' undergraduate work in Greek. The ability to read French and German is also very desirable, and, in the case of candidates for the degree of Ph.D., necessary. An opportunity to acquire an elementary knowledge of Italian is given in connection with the Seminary. The aim of the courses is to give the student a thorough grasp and detailed knowledge of particular authors, and of certain periods and fields of literary activity, as well as a training in literary criticism, and an acquaintance with the methods of original research.

22. Latin Seminary.—In 1912-13 the Seminary is devoted to Horace. Selected Satires, Epistles, and Odes are taken up for critical interpretation, and lectures given on various aspects of the poems. Special attention is paid to Horace's influence on later literature. Students

provide themselves in advance with a complete text of Horace, such as that in the Oxford or Teubner series, and with a good annotated edition.

F 2:30 2 to 6 units, both semesters (Fairclough)

23. Rapid Reading.—A weekly session for the reading of all the works of Horace.

T 2:30 2 units, both semesters (Fairclough)

24. Apuleius.—The greater part of the Metamorphoses is read, with particular attention to the style of the writer.

MWF 11:15 3 units, 1st semester (Foster)

25. Introduction to Latin Palaeography.—Lectures and practice in reading facsimiles of manuscripts.

W 9:15 1 unit, 1st semester (Foster)

26. Introduction to Latin Epigraphy.—Lectures and readings in Dessau's Inscriptiones Latinae Selectae.

TTh 9:15 2 units, 2d semester (Martin)

28. Etruscan.—Lectures on the nature of the language and its relation to other Italic dialects.

Th 2:30 2 units, 2d semester (Hempl)

Special Courses

29. History of Rome.—A general course, open to all students.

MWF 8:15 3 units, 2d semester (Elmore)

30. Studies in Roman History.—The course takes up the consideration of special problems. Open by permission of the instructor to those who have had Latin 29 or an equivalent.

TTh 8:15 2 units, 1st semester (Elmore)

31. Roman Art and Monuments.—A survey of the topography, architecture, sculpture, and other art-forms of ancient Rome, illustrated with lantern-slides. This course is intended mainly for major students in Latin and Greek, but is open also to students in History and Art. Others must receive special permission from the instructor before registering. [Not given in 1912-13.]

2 units, 2d semester (Fairclough)

32. Roman Private Life.—Lectures, illustrated with lantern-slides from ancient art and other sources. Open to major students in Latin, Greek, and History, and to upper classmen in other departments.

TTh 11:15 2 units, 1st semester (Cox)

GERMANIC LANGUAGES

George Hempl, James Owen Griffin, Professors.
Karl Gustav Rendtorff, William Alpha Cooper, Macy Millmore Skinner, Associate Professors.
†Bruno Boezinger, Herman Johann Hilmer, Assistant Professors.
Friedrick Alexander Wyneken, Instructor.
Anetta Haffner Hilmer, Assistant.

The advanced courses are intended both for the maturer undergraduate and for candidates for the degrees of Master of Arts and Doctor of Philosophy. Special consideration is given to the needs of those who intend to make the teaching of German their profession. Graduate work in the Germanic languages is facilitated by the opportunities offered by the library of the late Professor Hildebrand of Leipzig, which contains a rich and well-chosen collection of works on German philology and literature. This forms the nucleus of the department library, which is being rapidly developed.

The attention of all students of German is called to the course in the history of Germany, given as course 12 in the Department of History. This should be taken as early as possible.

Students who intend to teach German are expected to take at least courses 3, 6, 7, 8, 13*b*, 14, 16, 22, and either 9, 10, or 11. It is important that the student heed in time what is said in the notes to courses 2 and 13, and the note above course 9.

1. Elementary.—It is the object of this course to put the learner in possession of the elements of the German language. This implies: (1) a personal command of simple German, that is, the ability to understand such German whether heard or read, and to employ the language in simple conversation, narration, and description, both orally and in writing; (2) such a ready familiarity with the elements of German grammar as is essential for the attainment of this command of the language. 5 units, both semesters

MTWThF 8:15, 9:15, 10:15 (Cooper, Skinner, Hilmer)

2. Second-year German.—(See note below.)

a. Reading.—Texts suitable for the second year; for the most part, the writings of contemporary authors.

MWF 8:15, 9:15, 10:15, 11:15 3 units, both semesters

(Hempl, Griffin, H. Hilmer, Skinner, A. Hilmer)

†Absent on leave, 1912-13.

aa. Scientific Reading.—Texts selected with a view to preparing scientific students to read technical literature.

MWF 10:15, 11:15 3 units, both semesters (WYNEKEN)

b. Reproduction and Production, oral and written.—The work of this course is intended to assist the pupil in getting a personal command of German, both spoken and written; with it is correlated a thorough review of the elements of the grammar. 2 units, both semesters

TTh 8:15, 9:15, 10:15 (GRIFFFIN, COOPER, WYNEKEN)

Note.—Students expecting to continue the study of German beyond the second year are supposed to have completed both 2*a* and 2*b* or an equivalent.

3. Classical German Drama.—This course aims chiefly to be an introduction to the spirit of the classical German drama; but throughout the course an effort is also made to familiarize the student, by means of various selected readings, with the life and character of the German people.

MWF 8:15 3 units, both semesters (GRIFFIN, RENDTORFF)

4. Modern German Drama.—Lectures in connection with the interpretation and rapid reading of some of the more important works of the modern dramatists.

TTh 8:15 2 or 3 units, both semesters (GRIFFIN)

5. Modern German Novels.—The reading of standard modern novels, with lectures on the development of the novel.

TTh 9:15 2 or 3 units, both semesters (SKINNER)

6. Advanced German Grammar.—A systematic presentation of the important facts of German grammar, together with individual investigations of the usage of various writers.

TTh 1:30 2 units, both semesters (HEMPL)

7. German Composition.—By composition is meant, not translation from English, but practice in putting one's thoughts into acceptable written German.

MW 9:15; TTh 11:15 2 units, both semsters (WYNEKEN)

8. Advanced Composition.—

MW 8:15 2 units, both semesters (HILMER)

Note.—Students wishing to take up any of the three following courses (9, 10, 11) will be expected to have such preparation as can be obtained by pursuing courses 3 and either 4 or 5.

9. Lessing.—Lectures on Lessing's life and times, with reading and discussion of his principal works. [Not given in 1912-13.]

3 units, both semesters (————)

10. Schiller.—Lectures on Schiller's life, together with the interpretation and discussion of his writings.

TTh 8:15. 2 units, both semesters (SKINNER)

11. Goethe.—

a. Lectures on Goethe's life and works, and reading of selected works.

MWF 10:15. 3 units, both semesters (COOPER)

b. Goethe's Faust: Urfaust, Fragment of 1790, Part First and Part Second. [Not given in 1912-13.]

3 units, both semesters (COOPER)

13. The History of German Literature.—Lectures and readings.

a. From the earliest times to the eighteenth century.

TTh 8:15. 2 units, both semesters (RENDTORFF)

b. The eighteenth and nineteenth centuries. [Not given in 1912-13.]

2 units, both semesters (RENDTORFF)

Note.—Students electing course 13 are expected to have pursued a general course in the history of English literature and to be able to read German with facility.

14. Teachers' Course.—Lectures on the various methods employed in teaching modern languages, together with practical advice in the matter of conducting classes.

T 2:30-4:30 2 units, 1st semester (HEMPL)

15. The Genesis of Grammar.—Lectures on the origin and development of the parts of speech and of other grammatical apparatus. [Not given in 1912-13.] 2 units, 1st semester (HEMPL)

16. Middle-High German.—Grammar and selected texts (first semester); Walter von der Vogelweide (second semester).

MW 9:15 2 units, both semesters (RENDTORFF)

16b. Advanced Middle-High German.—

Th 2:30-4:30 2 units, both semesters (RENDTORFF)

17. Old-High German.—[Not given in 1912-13.]

2 units, both semesters (BOEZINGER)

18. Old Norse.

Th 2:30-4:30 2 units, 2d semester (HEMPEL)

19. Gothic.—[Not given in 1912-13.]

2 units, both semesters (BOEZINGER)

20. The Runes.—Lectures on the origin and development of primitive Germanic writing. [Not given in 1912-13.]

2 units, 1st semester (HEMPL)

21. The History of German Civilization.—Lectures with stereopticon.—This course is intended for students of German who wish to

become acquainted with the development of German cvilization in its relation to German literature.

W 2:30-4:30 2 units, both semesters (RENDTORFF)

22. The History of Germany.—[See course 12 in the Department of History, and the note at the beginning of this section, page 12.]

23.—Thesis Course.—Special investigations and reports intended primarily to furnish undergraduates a training in preparation for original research work. Under the direction of the various members of the staff. Credit subject to individual adjustment.

[See also course 28 in the Department of Latin.]

ROMANIC LANGUAGES

OLIVER MARTIN JOHNSTON, COLBERT SEARLES, Associate Professors.
CLIFFORD GILMORE ALLEN, ALBERT LÉON GUÉRARD, AURELIO MACEDONIO ESPINOSA, Assistant Professors.
ROBERT EDOUARD PELLISSIER, Instructor.
GEORGE LOUIS LAWRENCE, Assistant.

The undergraduate courses in the Romanic Languages are planned so as to give students an intimate acquaintance with the modern forms of the languages spoken in the principal neo-latin countries. To this end systematic attention is paid to pronunciation, reading, syntax, and conversation. In the higher courses special emphasis is laid on the study of literature. In order to give students an opportunity to become familiar with the spoken idioms, several of the advanced courses are conducted as much as possible in the language which forms the object of study.

The Department recognizes two classes of major students: (1) students who expect to teach French or Spanish and who wish to take up the study from the point of view of the specialist; (2) students who desire to group a course of study of a general nature around that of French or Spanish.

Either French or Spanish may be selected as a major subject. In French the minimum requirement consists of courses 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11. In Spanish the same requirement includes courses 14, 15, 16, 18, 19, and 21.

In addition major students who intend to teach either French or Spanish will be expected to take Latin 1, 2, and 4, German 1 and 2, and Elementary French or Spanish or Italian.

The Teacher's Recommendation.—The minimum requirement for the High School recommendation is as follows: In French—courses 2, 3, 6, 7, and 8; in Spanish—courses 14, 15, 16, 18, 19, and 21. The Department will insist also on courses 27 and 28. Recommendations will be given only on the vote of the Department, and will demand a degree of scholarship above the ordinary passing mark.

1a. Elementary French.—Fraser and Squair, French Grammar, with written and oral exercises and systematic training in French pronunciation on the basis of Matzke's Primer of French Pronunciation; Aldrich and Foster's French Reader.

MWF 9:15, 11:15 3 units, both semesters (PELLISSIER, ALLEN)

1b. Elementary French, Reading Course.—The course is intended for students who merely desire to obtain a reading knowledge of the language. Aldrich and Foster, Foundations of French; Aldrich and Foster's French Reader; Mérimée, Colomba.

MWF 8:15 3 units, both semesters (PELLISSIER)

[Courses 1*a* and 1*b* are continuous courses, open to all, but students desiring to enter after the end of the second week will be admitted only upon special examination.]

2. French Composition and Conversation.—The course will be conducted as far as practicable like the corresponding course in English composition, a part of each hour being devoted to conversation. Open to students who have completed course 1*a*, or who have received credit for entrance subject 6*a*.

MWF 10:15, 11:15 3 units, both semesters (GUÉRARD, SEARLES)

3. Modern French Reading.—Translation of selected texts in prose and verse. Open to students who have completed course 1*a* or course 1*b*, or who have received credit for entrance subject 6*a*.

TTh 9:15, 11:15 2 units, both semesters (GUÉRARD, PELLISSIER)

4. French Pronunciation.—Practice in French pronunciation with the phonograph, open to students registering for course 2. One class exercise and two practice hours each week for one semester.

T 2-3, 3-4 1 unit, either semester (SEARLES)

[Courses 2, 3, and 4 constitute the second year's work in French, and should, if possible, be taken during the same year. Course 4 may not precede course 2.]

5. Reading and Writing of French.—Vreeland and Koren, French Syntax and Composition. An intermediate course in reading and

composition intended primarily for students entering with entrance subjects 6*b* or 6*c*.

MWF 11:15 3 units, both semesters (GUÉRARD)

6. Advanced French Prose Composition.—Translation into French of selected English prose. Open to students who have completed course 2 or course 5.

TTh 10:15 2 units, both semesters (GUÉRARD)

7. Outline Course in the History of French Literature.—Lectures, supplemented by reading and reports by the members of the class. Not open to Freshmen. Prerequisite: course 3 or course 5.

MWF 10:15 3 units, both seemsters (SEARLES)

8. Classical French.—A study of the principal authors of the classical period. Representative texts will be read from the works of Corneille, Racine, Molière, Voltaire, Le Sage, La Fontaine, and Boileau. Not open to Freshmen. Prerequisites: courses 2 and 3, or course 5, or their equivalent.

MWF 9:15 3 units, both semesters (SEARLES)

9. History of French Literature in the Nineteenth Century.—Lectures, with reading of the principal authors and reports by the members of the class. Open to students who have completed courses 7 or 8.

TTh 11:15 3 units, both semesters (SEARLES)

[With permission Juniors and Seniors in other departments may register for one unit of credit in course 9 and be excused from the supplementary reading.]

10. French Lyric Poetry in the Nineteenth Century.—Fonsny and Van Dooren, Poètes Lyriques Français. Lectures in French. The work required of French majors will also be in French.

MF 9:15 2 units, 1st semester (GUÉRARD)

11. French Civilization in the Nineteenth Century.—Lectures in French. The work required of French majors will also be in French.

MF 9:15 2 units, 2d semester (GUÉRARD)

12. The French Drama in the Nineteenth Century.—Lectures in French. Reports on assigned topics. Prerequisite: two years of college French, including some practice in conversation.

TTh 11:15 2 units, 1st semester (PELLISSIER)

13. The French Novel from 1600 to the Beginning of the Romantic Movement.—Lectures in French and reports on assigned reading. Prerequisite: two years of college French including a course in conversation.

TTh 11:15 2 units, 2d semester (PELLISSIER)

14. Elementary Spanish.—Wagner, Spanish Grammar; Hills, Spanish Tales for Beginners; Echegaray, El Poder de la Impotencia. A continuous course open to all.

MWF 8:15, 10:15, 11:15 3 units, both semesters (ALLEN, ESPINOSA, PELLISSIER, LAWRENCE)

15. Second-year Spanish Composition and Conversation.—Review of grammar, with prose composition and conversation. Open to students who have completed course 14, or its equivalent. Conducted entirely in Spanish.

MWF 8:15 3 units, both semesters (ESPINOSA)

16. Modern Spanish Reading.—Translation of selected texts in prose and verse. Open to students who have completed course 14 or who have received credit for entrance subject 5*a*.

TTh 9:15 2 units, both semesters (ESPINOSA, ALLEN)

17. Spanish Pronunciation.—Practice in Spanish pronunciation with the phonograph is open to students likely to profit by such practice, as far as the limitations of time and space will permit.

1 unit, either semester (ESPINOSA)

[Courses 15, 16, and 17 constitute the second year's work in Spanish, and should, if possible, be taken during the same year. Course 17 may not precede course 15.]

18. Advanced Spanish Composition.—Translation into Spanish or selected English prose. Open to students who have completed course 15, or its equivalent.

TTh 10:15 2 units, both semesters (ESPINOSA)

19. Classical Spanish.—A study of the principal authors of the classical period. Representative texts will be read of Cervantes, Lope de Vega, Calderón, Alarcón, Tirso de Molina, as well as selections from Ford's A Spanish Anthology. Open to students who have completed courses 15 and 16 or their equivalent.

TTh 8:15 2 units, both semesters (ALLEN)

20. Modern Spanish Drama.—A study of the development of the modern Spanish drama from the beginning of the 19th century to the present time. Lectures, reports, and rapid reading of the more important works of Rivas, Gutiérrez, Hartzenbusch, Bretón de los Herreros, Zottilla, Ayala, Tamayo y Baus, Echegaray, and Marquina, conducted entirely in Spanish. Primarily for seniors. [Not given in 1912-13.]

MWF 9:15 3 units, 1st semester (ESPINOSA)

21. Outline Course in the History of Spanish Literature.—Lectures with reading of important works and reports by the members of the

class. Open to students who have completed course 19 or its equivalent.
TTh 10:15 2 units, both semesters (ALLEN)

22. Origins of Spanish Theatre.—A history of the drama from the earliest times to its full development with Lope de Vega. Lectures and collateral reading.
MW 9:15 2 units, 1st semester (ALLEN)

23. Introduction to the Study of Old Spanish.—Reading and interpretation of old Spanish texts. Lectures on old Spanish Phonology and Morphology with linguistic exercises based on El Cantar de mio Cid. Ford, Old Spanish Readings (Boston, 1911), Biblioteca de Autores Españoles, vol. LVII, Menéndez Pidal, Manual Elemental de Gramática Histórica Española (Madrid, 1905).
MWF 9:15 3 units, 2d semester (ESPINOSA)

24. Elementary Italian.—Gaffino, A New Grammar of the Italian Language; Bowen, First Italian Readings. A continuous course open to all.
MWF 8:15 3 units, both semesters (JOHNSTON)

25. Advanced Italian.—Dante, La Divina Commedia. Translation course open to students who have completed course 24.
MTTh 1:30 3 units, both semesters (JOHNSTON)

26. Dante and the Divine Comedy.—Lectures open to Juniors and Seniors in all departments. [Not given in 1912-13.]
2 units, 2d semester (JOHNSTON)
[Course 25 alternates with course 26.]

27. Phonetics.—Lectures on the organs and the nature and formation of speech sounds with special reference to the pronunciation of French. Intended particularly for teachers of language. Open only to advanced students. [Not given in 1912-13.]
2 units, 1st semester (JOHNSTON)

28. Teachers' Course in French.—Lectures on methods of teaching French, study of the available text-books, and review of French grammar. Open only to advanced students. [Not given in 1912-13.]
1 unit, 2d semester

29. Introduction to the Study of Old French.—Reading of selected passages from Bartsch-Wiese, Chrestomathie de l'Ancien Français (Leipzig, Vogel, 1908), with a study of Old French Phonology and Morphology. [Not given in 1912-13.]
2 units, both semesters (JOHNSTON)

30. French Historical Grammar.—Lectures on Old French Phonology and Morphology. 2 units, 2d semester (JOHNSTON)

31. Old French Literature.—Lectures on the Arthurian romances.
TTh 2:30 2 units, 1st semester (JOHNSTON)

32. Floire et Blancheflor.—A translation of the two Old French poems on *Floire et Blancheflor*, with lectures on the origin and growth of the legend.
W 1:30-3:30 2 units, both semesters (JOHNSTON)

33. Journal Club.—The instructors in the department and the advanced students meet regularly on alternate Fridays for the discussion of the periodicals and new books.
F 3-4

International Language.—Meaning and importance of the movement; comparative study of the principal solutions. Lectures.
By arrangement
1 unit (for thesis), 2d semester (GUÉRARD)

ENGLISH LITERATURE AND RHETORIC

‡ALPHONSO GERALD NEWCOMER, Professor.
SAMUEL SWAYZE SEWARD, JR., HOWARD JUDSON HALL, †LEE EMERSON BASSETT, HENRY DAVID GRAY, †WILLIAM DINSMORE BRIGGS, EVERETT WALLACE SMITH, Assistant Professors.
THERESA PEET RUSSELL, EDITH RONALD MIRRIELEES, VAN WYCK BROOKS, Instructors.
ELISABETH LEE BUCKINGHAM, Acting Instructor.
CLARENCE BRAY HAMMOND, RUSSELL OSBORNE STIDSTON, Teaching Assistants.
EVELYN WIGHT ALLAN (Dean of Women).

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

a. The courses in Chaucer, Shakespeare, Milton (or Spenser or Wordsworth), History of English Literature (course 32 or 36 in the third year, and English Philology 3 in the fourth year), besides such preliminary courses in vocal training, composition, or literature as may be requisite in each individual case.

b. English History. Students entering credited with Entrance English History are considered as having fulfilled this requirement.

c. A sound knowledge of at least one foreign language and its literature—ordinarily interpreted as requiring a minimum of 16 units in the chosen language, not including German 1, or French 1.

†Absent on leave, 1912-13.
‡Absent on leave, second semester, 1912-13.

In general, students are encouraged to include among their elected studies Latin or Greek (not less than two years; or, in case Latin or Greek be selected to meet requirement *c* above, one modern foreign language), Anglo-Saxon, and a course in science, with laboratory work. Students preparing for journalism may substitute for the more advanced courses in literature, courses in Advanced Composition, History, Economics, and Social Science.

The Teacher's Recommendation.—Recommendation for the Teacher's Certificate in English is granted only by vote of the department on the basis of approved scholarship, and upon the completion of a certain amount of prescribed work. The undergraduate courses to be usually prescribed are, in the Department of English Literature, Vocal Expression, Composition, Shakespeare, Milton, Teachers' Course, and one course in the history of literature, and, in the Department of English Philology, Anglo-Saxon, and Chaucer. Graduate study shall be taken in accordance with the following regulation:

Graduate Study

A graduate student in the Department of English Literature is expected to take within the year at least twenty units in courses (of whatever department) recognized as of an advanced or graduate character; and of these at least four must be in English Literature and four in English Philology.

Advanced Degrees

The preliminary requirements for entrance upon a course for an advanced degree in English are:

a. The course for the degree of A. B. in English or its equivalent.

b. An elementary knowledge of Anglo-Saxon.

c. A sound knowledge of two foreign languages (preferably one ancient and one modern language).

A candidate for the Master's degree in English Literature must take in all at least twenty units of advanced or graduate courses, of which at least six must be in English Literature and six in English Philology. If a Master's thesis is registered as a part of the work of either or both semesters, it may be credited (according to the judgment of the instructor under whose guidance it is being written) to the amount of three to five units a semester; but not more than four of such units in the year may apply toward the twelve units required in the two departments.

PRELIMINARY AND GENERAL COURSES

(Open to all students unless otherwise specified.)

A. Elementary Composition.—A one-semester course required of all first-year undergraduates except those who show themselves entitled to exemption. 1 unit, either semester

TTh 8:15, 9:15, 10:15 (MIRRIELEES, STIDSTON, HAMMOND)

1. Vocal Expression.—Courses in Vocal Expression are open to a limited number of students in the order of their application. Application should be made before the first meeting of the class in the semester, and the instructor reserves the right to refuse to enroll students who do not appear at the first session of the class.

a. The Speaking Voice.—Lectures on the voice and how to use it, class drill and exercises, personal conferences. Prerequisite to all other courses in Vocal Expression. [Not given in 1912-13.]

1 unit, 2d semester (BASSETT)

b. Reading Aloud.—A study of the principles of expressive reading, and the vocal interpretation of masterpieces in prose and poetry, with some practice in the preparation and delivery of short speeches on subjects of current interest. As a part of the work of the course each student is expected to memorize and vocally interpret 350 lines of Shakespeare during the semester. 3 units, either semester

MWF 8:15, 915, 11:15 (BUCKINGHAM)

2. English Composition.—Practical work in narration and description, first semester; in exposition, second semester. In one of the sections exposition is given in the first semester, and narration and description in the second. English majors are expected to enroll in section I (see schedule).

TTh 8:15, 9:15, 10:15, 11:15 2 units both semesters

(SEWARD, HALL, RUSSELL, SMITH, BROOKS)

4. Modern English.—The spoken language. Lectures on the relation of English to other tongues, the history and character of its vocabulary, standards of pronunciation, etc.

WF 8:15 2 units, 1st semester (NEWCOMER)

5. English Classics.—A study of representative works of great English writers from Malory to Burke, with assigned reading and writing. Open only to first-year students who are not English majors.

MWF 11:15 3 units, both semesters (MIRRIELEES)

6. Outline History of English Literature.—A survey, critical and historical, of English literature in its larger aspects, with readings. Designed primarily for English majors in the first year.

MWF 11:15 3 units, 1st semester (Brooks)

7. American Literature.—A survey of American literary history. Lectures and reports.

MWF 11:15 3 units, 2d semester (Brooks)

10. Tennyson.—A study of selected portions of Tennyson's poems, illustrating the growth of his literary art. A general course, designed for first-year students, and open to third-year and fourth-year students only by permission.

MWF 10:15 3 units, 2d semester (Hall)

11. Vocal Interpretation.—*a.* An advanced course in the vocal interpretation of literature. Designed particularly for those who intend to teach English literature. Prerequisites: courses 1*a* and 1*b*. [Not given in 1912-13.] 2 units, 1st semester (Bassett)

b. Dramatic Literature (second semester.) A careful analysis of two or three plays of Shakespeare. Members of the class will vocally interpret characters and scenes assigned for individual study. Prerequisite: course 11*a*. [Not given in 1912-13.]

2 units, 2d semester (Bassett)

12. Advanced Composition.—Including both rapid writing and the preparation of long themes. Prerequisite: course 2.

MWF 9:15 3 units, both semesters (Russell)

13. News Writing.—Practice in abstracting and condensing, writing within time and space limits, copy-reading and headline writing; together with instruction in methods of gathering news and in the duties of the various members of a newspaper staff. Prerequisite: course 2.

TTh 11:15 2 units, both semesters (Smith)

15. Shakespeare.—The first semester's work consists of a rapid reading of a considerable number of the plays in chronological sequence. The second semester is devoted to a more careful study of several additional plays. Open in the first semester to all second-year students: in the second semester to English majors and such others as show special interest and aptitude. 3 units, 1st or both semesters

MWF 10:15 (Newcomer, Allan)

16. English Bible.—Representative portions of the Bible studied as literature, with some consideration of the history and the prose style of the English versions. Not open to first-year students.

MWF 10:15 3 units, 2d semester (Russell)

19. Early Nineteenth Century Literature: 1798-1832.—A survey of English literature (exclusive of the novel) from the publication of Lyrical Ballads to the death of Scott. [Not given in 1912-13.]

2 units, both semesters (SEWARD)

20. Victorian Literature.—*a*. A survey of Victorian prose, with special emphasis upon Carlyle, Ruskin, and Arnold (first semester). *b*. A study of selected Victorian poets (second semester). Designed as a full year course, but may be taken for one semester only.

TTh 11:15 2 units, both semesters (SEWARD)

ADVANCED AND SPECIAL COURSES

21. Public Speaking.—Practice in the preparation and delivery of speeches adapted to various audiences and occasions, with attention to the style of spoken discourse based on a study of masterpieces of oratory. Prerequisite: course 2. [Not given in 1912-13.]

2 units, 2d semester (BASSETT)

22. Oral Debate.—Practice in the preparation and delivery of oral arguments, chiefly on current public questions. Open to a limited number of students who have taken or are taking course 24, to be admitted in the order of application. [Not given in 1912-13.]

2 units, both semesters (BASSETT)

24. Argument.—The theory of argumentation, with practice in the preparation of briefs and forensics. Open to all students in the third and fourth years. [Not given in 1912-13.]

2 units, both semesters (BRIGGS)

25. Short Story Writing.—Practice in the writing of short stories, and a study of the principles governing their composition. Open by permission to students in their third and fourth years.

T 1:30 2 units, both semesters (MIRRIELEES)

26. Play Construction.—The principles of dramatic writing developed in connection with the student's own work, together with the critical analysis of certain successful plays of the present. Lectures and conferences. Students desiring to take this course must submit some work which will indicate their qualifications.

M 2:30 2 units, both semesters (GRAY)

27. Current Newspapers.—The study and comparison of current daily newspapers with a view to observing their policies and ideals as shown in the news columns. Ordinarily English 13 should precede this course. 3 units, both semesters (SMITH)

MWF 11:15

30. Prosody and Language.—Two-thirds of the course will be given to studying the principles of versification in their practical application to the reading of English poetry; the other third will be given to investigating the laws of adaptability and growth observable in the history of the English language. The course is intended primarily for those who expect to teach, and normally follows the course in Anglo-Saxon (English Philology 1).

MWF 11:15 3 units, 2d semester (SEWARD)

31. Elizabethan Drama.—A survey of English dramatic literature from its origins to the closing of the theatres, omitting Shakespeare. Open to students of all departments in third and fourth years. [Not given in 1912-13.] 3 units, 2d semester (GRAY)

32. The Restoration and the Eighteenth Century.—From 1660 to 1740, the age of Dryden and the age of Pope, first semester. From 1740 to 1798, the age of Johnson and the early Romantic revival, second semester. [Not given in 1912-13.]

3 units, both semesters (HALL)

33. Milton: Paradise Lost.—Open to third-year and fourth-year students of all departments. [Not given in 1912-13.]

2 units, 1st semester (NEWCOMER)

34. Wordsworth.—Open to third-year and fourth-year students of all departments. 2 units, 1st semester (HALL)

TTh 9:15

36. English Fiction.—A course in the history of English Fiction, with emphasis on the rise and development of the novel in the eighteenth and nineteenth centuries. Open to third-year and fourth-year students.

MW 9:15 3 units, 1st semester (GRAY)

38. The Modern Drama.—A study of certain significant dramas of Ibsen, and of contemporary dramatists. Open to students of all departments in the third and fourth years. [Not given in 1912-13.]

3 units, both semesters (GRAY)

39. The Modern Novel.—The reading of one novel a week, supplemented by lectures covering additional works of the authors studied and some account of other important novelists of the time. The list of novels to be read in 1912-13 may be secured at any time from the instructor. It is suggested that students intending to take this course read as many as possible of these works in advance. Open to students in the third and fourth years.

MW 9:15 3 units, 2d semester (GRAY)

42. Teachers' Course in English.—A study of the methods of teaching Composition (first semester) and Literature (second semester) in secondary schools. Open to students in the senior year.

T 1:30-3:30 2 units, both semesters (SEWARD)

ALLIED COURSES IN OTHER DEPARTMENTS

Chaucer.—[English Philology 2.]

2 units, 1st semester (FLÜGEL)

History of Early English Literature.—[English Philology 3.]

3 units, 1st semester (FLÜGEL)

Chaucer (advanced course).—[English Philology 8.]

2 units, 2d semester (FLÜGEL)

Ballads and Lyrics of the Sixteenth Century.—[English Philology 9.]

2 units, 2d semester (FLÜGEL)

The Greek Epic.—[Greek 20.]

2 units, 1st semester (MURRAY)

Greek Tragedy.—[Greek 21.]

2 units, 2d semester (MURRAY)

Dante and the Divine Comedy.—[Romanic Languages 25.]

2 units, 2d semester (JOHNSTON)

GRADUATE COURSES

45. Shakespeare.—A textual and critical study of *Macbeth* and *Antony and Cleopatra.*

M 2:30 2 units, 1st semester (NEWCOMER)

47. Seminary.—The application of the principles of criticism in a special field. (Emerson, first semester; The English Lyric, second semester.)

W 2:30 2 units, both semesters (GRAY)

ENGLISH PHILOLOGY

EWALD FLÜGEL, Professor.

SAMUEL SWAYZE SEWARD, JR., Assistant Professor (Department of English Literature.)

1. Anglo-Saxon.—Anglo-Saxon Grammar and translation of select passages in prose.

MWF 11:15 3 units, 1st semester (SEWARD)

2. Chaucer.—This course is an elementary one, and includes an outline of Middle English Grammar for the beginner.

F 1:30 2 units, 1st semester (FLÜGEL)

3. History of Early English Literature (to 1557).—
Th 1:30-3:30 3 units, 1st semester (FLÜGEL)

ADVANCED AND GRADUATE COURSES

In order to prepare the future high school teachers satisfactorily, candidates for the Teachers' Recommendation in English are expected to take, besides the work in Literature, a whole year's advanced work in English Philology. If properly prepared they will be admitted to the Seminary and other advanced courses during their senior year. Candidates for the Master's Degree are expected to do at least a year's post-graduate work in English Philology, for which a reading knowledge of German, French (old and modern), and Latin is a prerequisite.

4. Middle English Grammar.—
M 1:30 2 units, 1st semester (FLÜGEL)

5. Beowulf.—[Not given in 1912-13.]
3 units, 2d semester (BRIGGS)

6. English Paleography.—
Th 1:30 2 units, both semesters (FLÜGEL)

7. Middle English Exercises.—The Pearl; Piers Plowman.
M 1:30 2 units, 2d semester (FLÜGEL)

8. Chaucer (advanced course).—Interpretation of the Prologue, the "Links," and lectures on the history of Chaucer criticism. Prerequisite: course 2 or its equivalent. Open to seniors of other departments.
Th 3:30 2 units, 2d semester (FLÜGEL)

9. Ballads and Lyrics of the Sixteenth Century.—[As "Teachers' Course" 3 units.]
M 3:30 2 units, 2d semester (FLÜGEL)

10. History of English Philology.—Lectures. [Not given in 1912-13.] 2 units, 2d semester (FLÜGEL)

11. Seminary.—Papers and Lectures. [Not given in 1912-13.]
2 units, both semesters (FLÜGEL)

12. Journal Club: Philological Section.—Reports on current journals by instructors and graduate students.
Fortnightly by arrangement 1 unit, both semesters (FLÜGEL)

BIBLICAL HISTORY AND LITERATURE

DAVID CHARLES GARDNER, Lecturer.
AUGUSTUS TABER MURRAY (Greek), THERESA PEET RUSSELL (English), Instructors.

1. Life and Teaching of Christ.—A history of the life and times of Jesus, with a study of the four Gospels, an analysis of the Ethics of Jesus, and the application of his teaching to the life of to-day. Lectures, discussions, and papers.

Th 1:30 — 1 unit, both semesters — (GARDNER)

Greek Testament.—A study of the Gospels and Letters of Paul. [Greek 12.]

2 units, 2d semester — (MURRAY)

English Bible.—Representative portions of the Bible studied as literature, with some consideration of the history and the prose style of the English versions. Not open to first-year students. [English 16.]

3 units, 2d semester — (RUSSELL)

PHILOSOPHY

HENRY WALDGRAVE STUART, Professor.
GEORGE HOLLAND SABINE, Assistant Professor.
SHO OSHIMA, Assistant.

Courses 1 and 6 only are open to first-year students.

1. Elementary Logic.—The principles of Deductive and Inductive Logic with special attention to the important types of fallacy.

MWF 9:15 — 3 units, 1st semester — (STUART, SABINE)

2. Elementary Ethics.—The ethical as compared with other meanings of Good and Bad. The rise of the distinction, in its ethical sense, in the experience of the individual. The working principles upon which our judgments of ethical goodness and badness are based. Reference will be made under each head to the more instructive historic theories.

MWF 10:15 — 3 units, 1st semester — (STUART)

3. History of Philosophy.—A general course covering the development of philosophical ideas and systems from the early Greek period to the end of the eighteenth century in Germany, and closing with a brief outline of the main philosophical problems of the nineteenth century. Attention will be given throughout to the connections of philosophy with social and political conditions and with science, literature, and religion.

MWF 8:15 — 3 units, both semesters — (SABINE)

4. Philosophy of the Nineteenth Century.—The development of philosophical problems and theories since Kant. Prerequisite: course 3 or an equivalent.

By arrangement 3 units, 1st semester (SABINE)

5. Philosophy in the Life of the Nineteenth Century.—The influence of philosophical ideas as manifested in important social and literary developments of the nineteenth century. The materials for study will be drawn chiefly from English literature. So far as possible the leading ideas thus presented will be correlated with their more explicitly philosophical equivalents. No prerequisite.

MWF 9:15 3 units, 2d semester (SABINE)

6. Advanced Logic.—Methods of investigation in use in the natural and social sciences, and the cardinal assumptions and principles on which these methods are based. Selected investigations from different fields constitute the material for discussion. Prerequisite: course 1 or an equivalent.

MWF 9:15 3 units, 2d semester (STUART)

7. Practical Ethics.—The ethical issues involved in cetrain fundamental problems of the individual and of society. The treatment of these and similar problems in earlier systems of morality and ethics. A continuation of course 2, but open, on approval, to students otherwise qualified.

MWF 10:15 3 units, 2d semester (STUART)

8. History and Applications of the Theory of Evolution.—The history, in outline, of the theory of evolution from its appearance among the Greeks to its formulation by Darwin and other modern representatives. Applications of the evolutionary method outside the province of biology and some philosophical implications of the evolutionary conception of the world. No prerequisite.

TTh 9:15 2 units, 2d semester (SABINE)

9. Outlines of General Philosophy.—The nature of philosophy and the principal problems arising in its attempt to gain a unified view of the world. An elementary study, critical and constructive, of the principal contemporary types of philosophic thought. Prerequisite: six units of credit in Philosophy or fourth year University standing with approval.

TTh 8:15 2 or 3 units, both semesters (STUART)

10. Seminary.—Individual work on topics in metaphysics, ethics, and the history of philosophy. By arrangement. (STUART, SABINE)

PSYCHOLOGY

FRANK ANGELL, LILLIEN JANE MARTIN, Professors.
JOHN EDGAR COOVER, Research Fellow in Psychic Phenomena.

1. General Psychology.—Lectures and exercises. Open to first-year students by permission. Titchener's Text-book of Psychology is used as a book of reference.

MTWTh 11:15 — 4 units, 1st semester — (ANGELL)

1a. Mental Hygiene.—Especially for Freshmen.

TTh 8:15 — 2 units, 1st semester — (MARTIN)

2. Experimental Psychology.—Lectures, one hour; laboratory, two hours. Students are recommended to take this course in connection with courses 1, 1*a*, and 4.

Lab. TTh 1:30 — 3 units, both semesters — (MARTIN, ANGELL)

3. Abnormal Psychology.—Not open to first-year students except by permission.

TTh 8:15 — 2 or 3 units, 2d semester — (MARTIN)

4. Psychology of the Fine Arts.—Open to freshmen by permission.

MWF 8:15 — 2 or 3 units, 1st semester — (MARTIN)

5. Advanced Laboratory Work.—

MWF 1:30 — 3 units, both semesters — (ANGELL, MARTIN)

6. Space Perception.—Usually presupposes or accompanies course 5.

TTh 11:15 — 2 units, 2d semester — (ANGELL)

7. Current Psychological Literature.—In this connection a subsection for the purpose of reading German and French Psychology will be formed, if so desired. By arrangement.

1 or 2 units, both semesters. — (ANGELL, MARTIN)

8. Psychology of Thinking and Psychical Research.—Open to those who have taken course 1 or course 3.

By arrangement — 2 units, 2d semester — (MARTIN)

9. Research Work.—

By arrangement — (ANGELL, MARTIN)

EDUCATION

Ellwood Patterson Cubberley, Professor.
Percy Erwin Davidson, Rufus Clarence Bentley, Lewis Madison Terman, Associate Professors.
Jesse Brundage Sears, Assistant Professor.
Morris Elmer Dailey, †George Archibald Clark, Lecturers.
Edith Naomi Bentley, Assistant.

The Department of Education offers three main lines of work:

1. Courses of a general nature on the history, function, and administration of public education, intended in part as information courses for the general university student and without reference to the work of teaching. To such students the courses of Groups I and II are recommended.

2. Courses intended to assist other departments in preparing their students for work in secondary schools. All such students should confer with members of the Department of Education as to courses, but in general courses 1, 2, and 13 are recommended if the candidate has not had experience in teaching. Course 13 is required under the California law, for the high school teacher's recommendation, as are courses 17 and 18, if the candidate has not had previous experience in teaching.

3. Courses primarily for major students, or those making Education a minor, and intended to give special preparation to (*a*) those who desire to become teachers of Education in normal schools or colleges, (*b*) those who wish to prepare for supervisory or administrative positions in the public schools, elementary or secondary, and (*c*) those who wish to prepare for special educational work in the elementary or secondary field.

The courses in Education are open to all students as electives or as minor subjects, but only those who desire to prepare for one of the lines of work mentioned above under (3 or 4), and whose preparation and experience are satisfactory to the Department, will be accepted as major students. In special cases those without teaching experience may be accepted as major students, but all such must register for courses 17 and 18 as soon thereafter as arrangements can be made.

Major Requirements

Major students begin their work in Education with the sophomore year, taking courses 1 and 2. Psychology 1 should also be taken this

†Absent on leave, first semester, 1912-13.

same year. For graduation in Education students will be expected to have completed 30 units in the Department, including practice in teaching. This should ordinarily include courses 1 and 2, 3 or 4, 7 or 8 9 or 10, 11 or 12, 6 or 13, 17, and 18, and one advanced course under Group IV, or a substantial equivalent. Zoology 1 or Physiology 1, and the course in Bionomics, should also be taken early in the student's course. Other collateral work will be advised to meet individual needs. Students coming with advanced or graduate standing from other universities, where the course of instruction does not parallel that offered here, may have substantially equivalent preparation or experience accepted in lieu of the courses required here.

The requirements for the baccalaureate degree cover only introductions to the different fields of Education, and it is assumed that those proposing to offer themselves for responsible positions in educational work, such as those indicated under 3, above, will proceed at once to the Master's degree. For this at least 20 units in advance of the baccalaureate requirements, together with the presentation of a satisfactory thesis, will be required. At least three-fourths of the 20 units must be work listed under Groups III and IV. The completion of the first year of graduate study should mean a somewhat general acquaintance with the different divisions of Education, together with the beginnings of specialization in some one of these.

During the second year of graduate study the student will be expected to attain a mastery of the literature and practice in two of the following divisions of the subject: (1) History of Education, (2) Theory of Education, (3) Administration of Education, (4) Educational Psychology, (5) Educational Hygiene. Students intending to proceed to the doctorate, either at once or later, should select one of these divisions as a major and one as a minor; complete in large part the required work in a second minor, outside of the department; pass off the modern language requirements; and get well started on the dissertation.

Library and Practical Facilities

The general university library contains the important recent books, and files of the more important educational magazines, both American and foreign. The collection of early American educational magazines and reports is also good. The special library of the Department, consisting of about 7000 volumes, contains one of the most complete collections of American state and city school reports to be found in the United States, the library ranking third in this respect. It is also rich in old college and normal school catalogues and text-books, of much

historical value. The collection of present-day school text-books is also quite complete.

In practical facilities the department has good working connections with the State Normal School at San Jose, and with the public schools of the immediate vicinity. For more important studies by advanced students the large school systems in the vicinity of the university can be used, and a class of retarded pupils is available (see course 26) for careful systematic instruction and study.

I. Elementary and Introductory Courses

(*Open to anyone with teaching experience, and to all others except first-year students.*)

1. Public Education in America.—A study of the province and some of the more important problems of public education in the United States. An introductory course. Lectures, following a syllabus, with assigned readings.

TTh 10:15 2 units, 1st semester (Cubberley)

2. Educational Theory.—An introductory course dealing with topics fundamental to education, such as the meaning of infancy, tradition, heredity, and environment, types of learning, the order of growth, character, etc. Lectures, following a syllabus, with assigned reading.

TTh 10:15 2 units, 2d semester (Davidson)

3. History of Education in Europe.—A study of the development of educational ideals and systems from the time of the Greeks and Hebrews to the present, with particular reference to the forces which have operated in the evolution of the various historic ideals and schools. The first semester (*3a*) covers the period up to the Reformation, and the second semester (*3b*) the period from the Reformation to the present. Either semester may be taken separately. Lectures, following a syllabus, with assigned readings.

MWF 9:15 3 units, both semesters (Sears)

4. History of Education in America.—A more advanced course, dealing with selected problems in the history and present condition of education in the United States. [Not given in 1912-13.]

2 units, both semesters (Cubberley)

II. More Advanced Courses, but of a Somewhat General Nature

(*Open to teachers, and to third- and fourth-year students. In general, courses 1 and 2 should precede these courses. Course 3 should precede or accompany course 19.*)

6. Elementary Education.—A course dealing with the organization and instruction in elementary schools, but with particular reference to

the content and the use of the course of study. The kindergarten will be considered incidentally. Intended primarily for prospective workers in the elementary school field.

TTh 9:15 2 units, both semesters (SEARS)

7. Social and Moral Education.—A study of the important facts and principles underlying social and moral education, as a basis for a criticism of current educational practice in this country and elsewhere. The course should be preceded by elementary work in psychology or ethics.

W 2:30-4:30 2 units, both semesters (DAVIDSON)

8. Logic of Education.—A study of the significance for education of the theory of knowledge and the psychology of thinking. Herbartian "General Method" will be reviewed. Open to students who have taken elementary work in psychology or logic.

MWF 11:15 3 units, 1st semester (DAVIDSON)

9. City School Administration.—A study of the educational, financial, and administrative principles underlying the proper administration of school systems in cities, with a view to the establishment of principles of action. An accompanying thesis required each semester.

W 3:30-5:30 3 units, both semesters (CUBBERLEY)

10. State School Administration.—A study of the educational principles underlying the proper administration of school systems in states and counties, and involving a comparative study of the school laws and school systems of the various American states. The course includes a study of such topics as federal and state policy, forms of control, revenue and its apportionment, the state and the teacher, the state and the child, private and sectarian education, and state oversight and control.

TTh 11:15 2 units, both semesters (CUBBERLEY)

11. Physical Aspect of the Child.—This course will include a consideration of the following topics: growth in height and weight; growth of parts and organs; common abnormalities of eye, ear, nose, throat, spine, heart, lungs, and teeth; nervous disorders, speech defects, malnutrition, mortality, and mental deficiency; physiological aspects of sleep, work, play, and rest.

MWF 10:15 3 units, 1st semester (TERMAN)

12. Educational Hygiene.—This course will deal with such topics as the history, methods, and results of medical inspection of schools; educational adaptations for defectives; the hygiene of gradation and promotion; the number and length of school sessions; the hygiene of

the school subjects; the hygienic supervision of athletics; the playground movement; hygienic aspects of co-education; the status of hygiene teaching in the schools; heating, lighting, ventilation, and the care of school buildings.

MWF 10:15 — 3 units, 2d semester (TERMAN)

III. COURSES INTENDED PRIMARILY FOR THOSE PREPARING TO TEACH IN SECONDARY SCHOOLS

(*Open to seniors and graduate students. Courses 1 and 2 should ordinarily precede these courses. Course 17 should precede course 18 by one semester.*)

13. Secondary Education.—A course dealing with the organization, scope, and method of public and private secondary schools in America, and including a consideration of the preparatory, cultural, commercial, technical, and industrial aspects of secondary education. Lectures, assigned readings, and reports. Intended primarily for and required of those preparing for the teacher's certificate. Open to seniors and graduates only.

MWF 8:15 — 3 units, 2d semester (BENTLEY)

14. Adolescence.—A survey of some of the literature of the subject, with special reference to those phases which are of most significance to those engaged in secondary education. Course 14 alternates with course 23. [Not given in 1912-13.]

2 units, both semesters (TERMAN)

15. The Administration of a School.—A practical course, dealing with the work of teachers and principals in a high school or city school. This course will involve some visitation of high schools in the vicinity of the University.

T 3:30-5:30 — 2 units, 2d semester (BENTLEY)

16. Types of Secondary Schools.—A more advanced course than 13, and consisting of an examination of the work proposed for the various new types of high schools—polytechnic, commercial, agricultural, and industrial—and a study of such schools as found in other lands, with a view to ascertaining the possibilities of such instruction.

TTh 8:15 — 2 units, 2d semester (BENTLEY)

17. Method and Management of Instruction.—A practical course in class-room management and the theory of instruction. Intended as a preparatory course for those expecting to do practice teaching, and should be taken the semester preceding. Not required if course 8 has been taken.

W 1:30 — 1 unit, either semester (SEARS)

18. Practice in Teaching.—Actual practice in the handling of classes and the giving of instruction, with accompanying conferences, as required by the rules of the State Board of Education for a California High School Teacher's Certificate. This may be arranged for at the University, at the San Jose State Normal School, or at any other California State Normal School. Hours for teaching must be arranged in advance: (*a*) if at the University, with Professor SEARS; (*b*) if at the San Jose State Normal School, with President DAILEY. Conference with all practice teachers.

M 4:30-5:30 4 units, either semester (SEARS, DAILEY)

IV. ADVANCED AND SPECIAL COURSES

(*Intended primarily for teachers of some experience, and for students making Education a major or a minor. Open to such, of junior standing or above.*)

19. Sources for the History of Education.—A more extensive and intensive study of the sources for the History of Education than is undertaken in connection with courses 3 or 4. Systematic readings, intended primarily to prepare for the teaching of the subject.

By arrangement. 2 units, both semesters (CUBBERLEY)

20. Criticism and Supervision of Instruction.—A few advanced students, who have had sufficient teaching experience, will be allowed to undertake the personal investigation, in the schools of the vicinity, of problems in instruction or supervision. Collateral reading and detailed written reports will be required. Enrollment only after conference with the instructor concerned.

1 unit, either semester (BENTLEY, DAVIDSON, SEARS)

21. School Administration Practice.—A laboratory course in school administration practice, dealing with the office and supervisory work of principals of elementary schools and superintendents of schools. Visits will be made to school systems in the vicinity of the university. [Not given in 1912-13.] 2 units, 2d semester (CUBBERLEY)

22. Statistical Method.—The theory of statistical work and the application of statistical method to the study of typical problems in the different fields of education. [Not given in 1912-13.]

2 units, 2d semester (CUBBERLEY)

23. Clinical Child Psychology.—A study of the methods employed in the diagnosis of normal and abnormal children. The literature of "mental tests" will be utilized as an approach to the chief laws of mental development. Prerequisite, General Psychology. Course 23 alternates with course 14.

Th 3:30-5:30 2 units, both semesters (TERMAN)

24. Educational Psychology.—The study of individual differences; the distribution of traits according to sex, age, maturity, environmental and hereditary influences; types of intellect and character, etc. Prerequisite, General Psychology. Course 24 alternates with course 25.

M 2:30-4:30 2 units, both semesters (TERMAN)

25. Experimental Pedagogy.—A study of the experimental investigations bearing upon such topics as the pedagogy of the school subjects (reading, writing, spelling, arithmetic, etc.); economic learning and habit formation; the doctrine of formal discipline; methods of testing the results of school work. Prerequisite, General Psychology. Course 25 alternates with course 24. [Not given in 1912-13.]

2 units, both semesters (TERMAN)

26. Experimental Teaching.—The course provides an opportunity to properly qualified students to undertake systematic instruction of normal and retarded children with a view to applying, under controlled conditions, accepted principles of educational psychology, and to studying concretely current problems of the elementary curriculum. Required of prospective teachers in normal schools, and recommended to prospective supervisors of elementary education. Prerequisites, General and Experimental Psychology, and Education 6, 23, and 25, or their equivalents. Two hours of instruction and five hours of teaching weekly.

By arrangement 4 or 5 units, either semester (DAVIDSON)

27. Educational Theory, Advanced Course.—The course deals with phases of biology and psychology more directly concerned in education. [Not given in 1912-13.] (DAVIDSON)

28. Foreign School Systems.—A comparative study of the more important foreign state school systems, their policy of organization, ideals of work, methods of instruction, training of teachers, courses of study, statistics, and recent reforms. Different national systems will be studied each year. [Not given in 1912-13.]

2 units, both semesters (CUBBERLEY)

30. The Training of Teachers.—This course deals with the organization of normal schools and the professional preparation of teachers, and is primarily intended for those entering on the work of training and supervising teachers.

TTh 10:15 1 unit, 2d semester (CUBBERLEY)

31. Thesis Work.—In certain courses, students may be given an additional hour of credit on presentation of a satisfactory thesis on an

assigned topic embodying the results of independent work. The consent of the instructor is necessary before registering.

1 unit, either semester

32. Special Courses.—Special work in independent investigations may be provided for students prepared to do advanced work, the nature of the investigation being determined by the student's preparation and needs. Candidates for advanced degrees will ordinarily register their thesis under this course, the number of units of credit being subject to individual arrangement. The members of the instructing staff stand ready to supervise independent investigations in the following fields:

(*a*) History and organization of American Education, and problems in state and city school administration. (CUBBERLEY)

(*b*) Problems in elementary instruction. (DAVIDSON, SEARS)

(*c*) Problems in the organization and administration of secondary education. (BENTLEY)

(*d*) Problems in mental development, and in child and school hygiene. (TERMAN)

V. Courses for Teachers of Special Subjects

The following special courses of instruction, and groupings of courses, designed to prepare teachers for special work in the public schools, are open as electives to majors in other departments, or may be taken in conjunction with a major in Education.

1. Commercial Teachers' Training Course

35. Shorthand and Typewriting.—A practical demonstration course in the teaching of shorthand and typewriting as branches of high school instruction, supplemented by discussions and demonstrations in the treatment of business correspondence, geography, arithmetic, law, and other collateral subjects in their relation to the training of stenographers and bookkeepers, the object of the course being to give a working plan for handling commercial subjects in the high school. The course will fit for the actual duties of a stenographer or secretary and hence will be of interest also to students contemplating a business career. One hour of instruction—lectures and discussions—and two hours' practice, three times weekly. [Not given in 1912-13.]

3 units, both semesters (G. A. CLARK)

2. Manual Arts Teachers' Course

This curriculum is designed to prepare teachers of the manual arts for work in polytechnic high schools. The full curriculum requires a minimum of 28 units of work, or a minimum of 22 units if preparation

in Foundry Work and Pattern Making is omitted. The courses marked with the asterisk are essentials.

*1. Woodworking.—[Mech. Eng., 5.] 2 or 3 units, either semester.

*2. Forge Work.—[Mech. Eng., 1*a* and 1*b*.] 3 units, either semester.

*3. Machine Shop Work.—[Mech. Eng., 7*a* and 7*b*.] 3 units, either semester. (Presupposes Forge Work.)

4. Foundry Work.—[Mech. Eng., 3*a* and 3*b*.] 3 units, either semester.

5. Pattern Shop Work.—[Mech. Eng., 6*a* and 6*b*.] 3 units, either semester. (Presupposes Woodworking and Foundry Work.)

*6. Freehand Drawing.—[Graphic Art, course 1.] 3 units, each semester.

*7. Linear Drawing and Lettering.—[Engineering, 1*a*.] 1 unit, either semester.

8. Descriptive Geometry.—[Engineering, 1*b*.] 1 unit, 1st semester. (Presupposes Algebra, Geometry, and Linear Drawing and Lettering.) 4 units, 2d semester.

*9. Elementary Machine Drawing.—[Mechanical Eng., 11.] 2 or 3 units, either semester. (Presupposes Freehand Drawing, Linear Drawing and Lettering, and Descriptive Geometry.)

This course will take a part of a student's time for two years to complete. If begun in the Senior year it can be completed at the same time the Teacher's Recommendation is ordinarily obtained. The best arrangement of the work will be as follows:

COURSES	SEMESTERS AND UNITS			
	1st.	2d.	3d.	4th.
*Woodworking	2–3	—	—	—
*Linear Drawing and Lettering	1	—	—	—
Descriptive Geometry	1	4	—	—
Foundry Work	3	—	—	—
Pattern Shop Work	—	3	—	—
*Freehand Drawing	—	—	3	3
*Forge Work	—	—	3	—
*Machine Shop Work	—	—	—	3
*Machine Drawing	—	—	—	2–3
Minimum units	7	7	6	8

3. Physical Training Director's Course

This curriculum is designed to prepare students to teach physical training and to direct a gymnasium in connection with a public or private secondary school or a Y. M. C. A., or to supervise municipal

playground work. It is possible to complete this course in two years, but the best arrangement will be to divide the work over three years. The major subject may be in Zoology or Education, in which case other work in the department will be expected to meet major requirements, or the major may be elsewhere and the course be carried as a teaching minor. For an outline of the work for men and women, see under Physical Training and Personal Hygiene.

VI. Courses in Other Departments

The following Teachers' Courses in other departments are designed for students preparing to teach these special subjects in secondary schools. Such courses are usually necessary for the departmental recommendation, but do not count again as part of the units required in Education for a Teacher's Certificate.

a. Teachers' Course in Greek.—[See Department of Greek.]

b. Teachers' Course in Latin.—[See Department of Latin.]

c. Teachers' Course in German.—[See Department of Germanic Languages.]

d. Teachers' Course in French.—[See Department of Romanic Languages.]

e. Teachers' Course in English.—[See Department of English.]

f. Teachers' Course in History.—[See Department of History.]

g. Teachers' Course in Drawing.—[See Department of Graphic Art.]

h. Teachers' Course in Elementary Physics.—[See Department of Physics.]

HISTORY

‡Ephraim Douglass Adams, Arley Barthlow Show, Edward Benjamin Krehbiel, Professors.

†Payson Jackson Treat, Henry Lewin Cannon, Associate Professors.

Edgar Eugene Robinson, Percy Alvin Martin, Assistant Professors.

Mary Wilhelmine Williams, Acting Instructor.

David Starr Jordan, Lecturer.

The Teacher's Recommendation.—To obtain a Teacher's Recommendation in History the applicant must have completed, in a manner acceptable to the Department, three of the courses, 3, 4 (or 11), 5, 6, and 7, one advanced course (throughout one year), and the Teachers' Course in History.

‡Absent on leave, second semester, 1912-13.
†Absent on leave, first semester, 1912-13.

1. Historical Training Course.—A practical course in the finding and handling of historical material. Required of, and limited to, first-year History majors.

T 8:15 — 1 unit, both semesters — (MARTIN)

[History of Greece.—See Greek 16.]

[History of Rome.—See Latin 29.]

[Studies in Roman History.—See Latin 30.]

3a. The Early Middle Ages, 476-1095.—A general course, open to all students.

MWF 9:15 — 3 units, 1st semester — (SHOW)

3b. The Later Middle Ages, 1095-1492.—A continuation of course *3a*. Open to all students who have had course *3a*, or a satisfactory equivalent.

MWF 9:15 — 3 units, 2d semester — (SHOW)

4a. English History to 1603.—General outline course, open to a limited number of first-year students.

MWF 8:15 — 3 units, 1st semester — (CANNON)

4b. English History from 1603 to the present time.—A continuation of course *4a*.

MWF 8:15 — 3 units, 2d semester — (CANNON)

5a. Modern European History, 1500-1715.—A general outline course. Not open to first-year students.

TTh 9:15 — 2 units, 1st semester — (KREHBIEL)

5b. Modern European History, 1715-1900.—A continuation of course *5a*.

TTh 9:15 — 2 units, 2d semester — (KREHBIEL)

6. American History to 1815.—A study of the westward movement of the American people; outlining Colonization, Revolution, Constitution, and the National State to the Peace of 1815. An introductory course for freshmen and sophomores of all departments.

MWF 10:15 — 3 units, both semesters — (ROBINSON)

7. United States History since 1815.—Open to students who have had one course in history.

TTh 10:15 — 2 units, 1st semester — (ADAMS)

8. The Westward Movement.—A study of the expansion of the American people into the Mississippi Valley, and the American occupation of California and the Pacific Northwest. Emphasis—the influence

of the "West" upon national and international affairs. Open to seniors and juniors.

TTh 10:15 2 units, both semesters (Robinson)

9a. The Far East.—An account of the relations between Western nations and the peoples of Eastern Asia. The history of the Portuguese, Dutch, British, and French possessions in the Far East. Not open to first-year students. [Not given in 1912-13.]

3 units, 1st semester (Treat)

9b. The Far East.—China, Japan, the Philippines. Not open to first-year students.

MWF 11:15 3 units, 2d semester (Treat)

10. Spain and Spanish America.—A brief survey of the History of Spain, followed by a study of the political, social, and industrial development of Spanish America. A reading knowledge of Spanish is useful but not required. Not open to first-year students.

MWF 9:15 3 units, both semesters (Martin)

11. English Constitutional History.—The course aims to explain the development and operation of the present English constitution as well as to give the background for American constitutional history. Not open to first-year students.

TTh 8:15 2 units, both semesters (Cannon)

12. History of Germany.—General outline course. Not open to first-year students.

MWF 11:15 3 units, both semesters (Martin)

13a. The Ancient Church.—A general course in Church History from the Apostolic Age to Gregory the Great (A. D. 1-590), with special reference to its connection with the general movements of the age. Open to all except first-year students. [Not given in 1912-13.]

2 units, 1st semester (Show)

13b. The Mediaeval Church.—A continuation of course 13*a*, to the end of the Crusades and the beginning of the church reform movement. [Not given in 1912-13.] 2 units, 2d semester (Show)

14a. German Institutions in the Early Middle Ages.—Lectures on the economic, social, and political institutions of Germany in the Ancient and Frankish periods. Open to third-year students who have taken courses 3*a* and 3*b*.

TTh 10:15 2 units, 1st semester (Show)

14b. German Institutions in the Later Middle Ages.—A continuation of course 14*a* through the Feudal periods.

TTh 10:15 2 units, 2d semester (Show)

15a. The French Revolution and Napoleon.—A lecture course Discussions, investigations, and reports form a part of the work. Open to students who have had courses 5*a* and 5*b*, or an equivalent.

MWF 9:15 3 units, 1st semester (KREHBIEL)

15b. Europe in the Nineteenth Century.—A very considerable portion of this course is devoted to contemporary politics in Europe. The course is intended for third- or fourth-year students who are prepared to make independent investigations and reports upon present day problems in Europe. Prerequisites: 5*a* and 5*b*. [Not given in 1912-13.]

3 units, 1st semester (KREHBIEL)

16. Teachers' Course.—Lectures, recitations, and practice dealing with the problems of history teaching in elementary and secondary schools.

TTh 2:30 2 or 3 units, both semesters (SHOW)

17. Periodical Literature.—Current historical articles. Open to a limited number of advanced students.

F 1:30 1 unit, both semesters (CANNON)

18a. American and English Relations During the Civil War.—Use of British and American documentary material. Open to third-year students who have taken general courses in English and American history. The documents are selected by the instructor, and the course is intended to furnish training in the interpretation of documentary material.

MWF 11:15 3 units, 1st semester (ADAMS)

18b. American and English Relations, 1815 to 1860.—Search for and selection of material on some assigned topic in diplomacy, with especial reference to use of the United States documents and the British sessional papers.

MWF 11:15 3 units, 2d semester (WILLIAMS)

20. International Conciliation.—A course of lectures touching the effects of war and the possibility of substituting peaceful means of settling the differences of nations. Not open to first-year students.

MWF 10:15 3 units, 2d semester (JORDAN, KREHBIEL)

21. Tropical Colonization in the Far East.—A study of the present methods of the English, Dutch, French, German, and American peoples in managing tropical dependencies in the Far East. Open to students who have taken courses 9*a* and 9*b*. [Not given in 1912-13.]

2 units, 1st semester (TREAT)

22. History of Australasia.—An account of British colonization in Australia and New Zealand to the present time. Open to third-year students who have a satisfactory knowledge of English history.

TTh 9:15 2 units, 2d semester (TREAT)

ADVANCED COURSES

Intended primarily for graduate students, but open to advanced undergraduates, with permission of their instructors.

27. Mediaeval Institutions.—A practical study of select documents in the field of German constitutional history. Ability to read Latin and German is required. By appointment.

2 units, both semesters (SHOW)

28. Seminary in Westward Movement.—Topic for 1912-13: Van Buren Administration.

TTh 2:30-3:30 2 units, both semesters (ROBINSON)

29. Seminary in English History.—Subject for 1912-13: The Spanish Armada.

F 2:30-4:30 2 units, both semesters (CANNON)

31. American Diplomatic History since 1815.—Open to students who have had course 18, and to others by special permission. Thesis required.

TTh 3:30 2 units, both semesters (ADAMS, WILLIAMS)

32. Development of International Arbitration in Europe.—

W 2-4 2 units, both semesters (KREHBIEL)

35. Seminary in American-European Relations in Nineteenth Century.—Assignment of topic to each student and thesis required.

By appointment 2 units, 1st semester (ADAMS)

36. American Diplomacy in the Far East.—Open to students who have had course 9*b*.

M 2:30-4:30 2 units, 2d semester (TREAT)

ECONOMICS

MURRAY SHIPLEY WILDMAN, BURT ESTES HOWARD, †ALBERT CONSER WHITAKER, Professors.

IRA BROWN CROSS, Assistant Professor.

DONALD FREDERICK GRASS, STEPHEN IVAN MILLER, JR., MAX LIPPITT LARKIN, Instructors.

WILLIAM EDWARD COX, Assistant.

†Absent on leave, 1912-13.

Major students in Economics are required to secure credit for a minimum of 9 units in courses listed as advanced courses. A minimum of 12 units in the Department is prerequisite to registration in any advanced course.

The Teacher's Recommendation.—To obtain a Teacher's Recommendation in Economics and Social Science the applicant must have completed five of the courses 1, 2, 4, 6, 10, 12, 20, 22, 23, 31, 32.

Course 1 is prerequisite to all other courses in the Department.

1. Elements of Economics.—A general and introductory course. One lecture hour and two quiz hours each week.

MWF 9:15 — 3 units, both semesters (WILDMAN, GRASS, MILLER, COX)

2. Accounting.—Development of accounting; theory of debit and credit; bookkeeping forms; preparation of balance sheets; their interpretation; application of theory and principles to various systems of accounts; practical accounting problems.

MWF 11:15 — 3 units, 1st semester (GRASS)

3. Insurance.—General principles of insurance, their development and application to modern business; the principles, forms, and technique of life insurance and fire insurance; recent tendencies, as government insurance, workingmen's compensation, etc.

TTh 9:15 — 2 units, 2d semester (GRASS)

4. Money and Banking.—Forms and laws of money, and the principles and practice of banking.

TTh 11:15 — 2 units, both semesters (WILDMAN)

5. Railway Transportation.—The present American railway system, railway finance, railway statistics, theory of rates, methods of public control.

MWF 10:15 — 3 units, 2d semester (MILLER)

6. Public Control of Corporations and Trusts.—A study of the law and public policy of the United States with respect to the control of corporations and capital combinations. [Not given in 1912-13.]

3 units, 2d semester (WHITAKER)

7. The Foreign Exchanges.—A study of the system of settling international indebtedness; principles and practice of foreign banking; money markets of the world and their relations. Domestic exchange will also be considered. [Not given in 1912-13.]

2 units, 2d semester (WHITAKER)

8. Corporation Finance.—The promotion and organization of business corporations, the administration of funds, the conservation of

property and credit, forms and uses of securities, receiverships and re-organization.

MWF 11:15 3 units, 1st semester (Wildman)

8a. Investments.—A study of the issues of national, state, and municipal governments, of railways and industrial corporations, the organization and methods of stock exchanges, bond and brokerage houses. Open to students who have taken course 8.

MWF 11:15 3 units, 2d semester (Wildman)

10. The Labor Problem.—Primarily a study of American trade unionism, strikes and lockouts, boycotts, arbitration and conciliation.

MWF 11:15 3 units, 2d semester (Cross)

12. Charities.—A general survey of the leading economic, social, and individual causes of poverty, and a study of the methods and principles of modern relief.

MWF 9:15 3 units, 2d semester (Cross)

12a. Corrections.—The causes and remedies of crime; the treatment of the criminal; criminal anthropology; juvenile delinquency.

MWF 9:15 3 units, 1st semester (Cross)

16. Market Organization.—An examination of customs and rules governing the marketing of staple commodities.

MWF 8:15 3 units, 1st semester (Larkin)

Advanced and Graduate Courses

13. Socialism.—A discussion of the fundamental doctrines of Socialism and allied movements for social betterment.

MWF 11:15 3 units, 1st semester (Cross)

15. Statistics.—A study of elementary statistical methods, and an examination of statistical data relating to selected social and economic problems.

TTh 9:15 2 units, both semesters (Larkin)

20. Public Finance.—A general course dealing chiefly with the principles underlying public expenditures, revenues, debts, and financial administration.

MWF 10:15 3 units, 1st semester (Miller)

21. American Methods of Taxation.—An intensive study of the federal and the state and local taxes, including the customs and internal revenue duties, the income tax, the general property and corporation taxes, and the inheritance and various forms of business taxes. Should be preceded by Courses 8 and 9. Students who have not secured credit for these courses may register with the consent of the instructor. [Not given in 1912-13.] 3 units, 2d semester

22. Seminar in Labor.—Open to students who have taken course 10.

M 2:30 2 units, both semesters (Cross)

23. Business Administration.—An introductory study of the methods employed in modern industrial and commercial enterprises, the organization and correlation of departments, the psychology of selling and buying, promotion of efficiency and coöperation in the personnel.

TTh 11:15 2 units, 2d semester (Grass)

24. The Theory of Interest.—A study of the causes giving rise to interest on capital and the factors which determine its amount. Given every other year in alternation with course 25. [Not given in 1912-13.]

2 units, both semesters

25. Value and Distribution.—Nature and causes of value, factors governing value, and the principles of the distribution of income. Given every other year in alternation with course 24.

MWF 10:15 3 units, 2d semester (Larkin)

26. History of Political Economy.—A survey of the growth of economic theories and opinions in modern times, together with an inquiry into the character and methods of current economic science.

MWF 1:30 3 units, both semesters (Larkin)

27. Graduate Seminar.—Open to graduate economic majors only.

T 7:30 2 units, both semesters (Wildman)

Political Science

30. Comparative Federal Government.—A comparative study of the governments of Germany, Switzerland, and the United States. Open to students who have taken History 7, History 5*b*, and History 12, or their equivalents. A reading knowledge of German is desirable but not required.

MWF 9:15 3 units, 1st semester (Howard)

31. American Politics.—An inquiry into the organization and administrative functions of the government, the competence of its courts, problems touching citizenship, etc. Open to students who have taken History 6 or History 7 or an equivalent.

MWF 10:15 3 units, 1st semester (Howard)

32. Municipal Government.—Including a critical study of various municipal charters and forms of city government, together with an investigation of certain problems in municipal administration.

MWF 11:15 3 units, 2d semester (Howard)

33. Parliamentary Government.—A study of the governments of England and France. Not open to first- and second-year students.
MWF 9:15 3 units, 2d semester (HOWARD)

34. Seminary in Political Science.—An examination of the basal theories underlying political institutions. Open only to students who have a good knowledge of general and constitutional history, and who read German or French readily.
T 1:30-3:30 2 units, both semesters (HOWARD)

LAW

FREDERIC CAMPBELL WOODWARD, ARTHUR MARTIN CATHCART, WESLEY NEWCOMB HOHFELD, †CHARLES ANDREWS HUSTON, JOSEPH WALTER BINGHAM, Professors.
EMLIN MCCLAIN, Acting Professor (second semester).
MARION RICE KIRKWOOD, Assistant Professor.
SAMUEL WATSON CHARLES, Lecturer.

The purpose of the Department is to provide a thorough legal education for students who are fitted by their maturity and their previous academic training to pursue professional study under university methods of instruction. The curriculum covers three academic years and constitutes an adequate preparation for the practice of law in any English speaking jurisdiction. Elective courses in Code Pleading and in California Practice are offered, and graduates of this school are admitted to the California Bar without examination. A comprehensive group of courses in Public Law, of value not only to the law student but to the student who contemplates entering the diplomatic, consular, or other government service, is a feature of the curriculum.

Only college graduates and students who have completed two years of work in the pre-legal curriculum of this University (see below), or its equivalent, are admitted as regular students. Under certain conditions persons over twenty-three years of age who have had experience in business, or who evince uncommon ability, may be admitted as unclassified students, not candidates for a degree.

THE LIBRARY

The Law Library contains over 16,500 volumes, including complete sets of the English, Irish, Scotch, and Canadian reports, the reports of all the Federal courts, a practically complete set of the reports of the American States and of the Canadian Provinces, the National Reporter

†Absent on leave, 1912-13.

system, the standard collections of cases (including the American Decisions, American Reports, American State Reports, Lawyers' Reports Annotated, and American and English Railway Cases), a working collection of statutes, text-books, encyclopedias, digests, and other books of reference, and sets of the leading American, British, and Continental legal periodicals.

Pre-Legal Curriculum

For undergraduate students who enter with the intention of preparing for the study of law, a pre-legal curriculum is offered by the University under the direction of the Faculty of the Law School. This curriculum ordinarily occupies four years and requires that the student obtain 120 units of university credit. The equivalent of three years (90 units of credit) is given to general culture studies (for instruction in which no tuition is charged) and of one year (30 units of credit) to the professional study of law.

In electing courses in general culture subjects it is expected that 37 units will be applied as follows: To English Composition, 4; to a language or languages other than English, 12; to English or American History, 9; to Economics, 6; to Mathematics, Logic, Chemistry, or Physics, 6.

Students who satisfactorily complete the full pre-legal curriculum are granted the degree of Bachelor of Arts by the University, and by reason of having had one year of law study as undergraduates may satisfy the requirements for the degree of Juris Doctor by two years of graduate law study.

Students who satisfactorily complete the first two years of the pre-legal curriculum, including the 37 units specified above, may enter the law school as candidates for the degree of Bachelor of Laws.

Admission to the Professional Curriculum

Admission to the professional curriculum in law is granted to students duly enrolled in the University, as follows:

I. To students who have received the degree of Bachelor of Arts, or an equivalent degree, from this University or some other institution of recognized collegiate rank.

II. To students who have received credit for two years of work in the pre-legal curriculum offered by this University, or the substantial equivalent thereof in some other institution of recognized collegiate rank.

III. In the discretion of the Faculty of Law, to students over twenty-three years of age, who cannot meet the foregoing requirements,

but who have had experience in business or who evince uncommon ability. Such unclassified students will be afforded all the privileges of the School, and will be given a certificate in lieu of the degree awarded to regular students.

Admission to Advanced Standing in Law

By special vote of the Faculty of Law credit may be given without examination for work satisfactorily completed at other law schools, but in no case will credit be given for work done otherwise than in residence at an approved law school. Examinations for advanced standing in law, if required, may be taken in places other than at the University. Applications for such examinations should be made not later than April 1, for the May examinations, and not later than November 15, for the December examinations. A fee of five dollars per course is charged for examinations not taken at the University.

Law School Curriculum

The work of the first year in the Law School is required, and consists of the following courses: Contracts, Torts, Introduction to Property, Equity I, and Agency.

The work of the second and third years in the Law School is elective, but the following courses may not be taken ordinarily before a student has completed the work of two years in the Law School: Administrative Law, Private Corporations, Municipal Corporations, Evidence, and California Practice.

The courses offered in the Law School, roughly grouped for purposes of convenience according to the nature and analogies of the subject matter, are as follows:

1. Introduction to the Study of Law.—Nature, origin, and evolution of law; sources of law; sanctions of law; legal rights and duties; classification of law; historical sketch of English and American law. The methods of legal study; the use of reports, digests, encyclopedias, and treatises; practice in the analysis of cases and in the preparation of abstracts and briefs. Open to students of any department who have 25 units of credit in the University. Wambaugh, Study of Cases; and selected cases.

TTh 11:15 2 units, 2d semester (Kirkwood)

2. Criminal Law.—Nature and sources of criminal law; crime as an act; attempts; criminal intent; circumstances affecting illegality of act; specific offenses; crimes against the person, larceny and allied

offenses, crimes against the dwelling-house, conspiracy. Open to all law students. Beale, Cases on Criminal Law (2d ed.).

MW 11:15, TTh 9:15 4 units, 1st semester (KIRKWOOD)

3. Constitutional Law.—Nature and sources of American constitutional law; adoption and amendment of constitutions; separation of powers; power of judiciary to declare acts of the legislative and executive branches of government unconstitutional; citizenship; privileges and immunities of citizenship; due process of law; police power; eminent domain; taxation; ex post facto and retroactive laws; laws impairing the obligation of contracts; regulation of commerce; money; war; government of territories. Open to second- and third-year law students and to well-prepared fourth-year students in history, economics, and political science. Thayer, Cases on Constitutional Law.

T 10:15, MWF 11:15 4 units, 2d semester (CATHCART)

4. Administrative Law and Public Officers.—Administrative regulations; jurisdiction, discretion, adjudication; enforcement of orders; habeas corpus; mandamus; certiorari; equitable jurisdiction in public law. Open to third-year law students. Freund, Cases on Administrative Law. [Not given in 1912-13.]

3 units, 1st semester (HUSTON)

5. Municipal Corporations.—General nature; corporate capacity; self government; creation, annexation, division, dissolution, succession; modes of action, ratification and curative acts; estoppel by recitals; municipal police power; local improvement and services, including special assessments; municipal property, especially public streets; municipal contracts; expenditure and donations; indebtedness and its constitutional limit; liability. Prerequisite: course 25. Case-book to be announced. [Not given in 1912-13.]

2 units, 2d semester (HUSTON)

6. International Law.—Nature and sources of international law; territorial rights of states; territorial jurisdiction; jurisdiction on high seas; nationality; belligerency; neutrality. Open to second- and third-year law students, and to well-prepared fourth-year students, in history, economics, and political science. Scott, Cases on International Law. [Not given in 1912-13.]

4 units, 2d semester (———)

7. Conflict of Laws.—Nature and force of foreign law; comity; jurisdiction over persons and things; jurisdiction of courts; creation of personal rights and of rights of property; torts and contracts; enforcement of rights. Open to second- and third-year law students. Beale, Cases on Conflict of Laws. [Given in 1911-12 and in alternate years thereafter.]

3 units, 1st semester (———)

8. Admiralty.—Admiralty jurisdiction, basis; maritime contracts, torts, and crimes; maritime liens, ex contractu, ex delicto, priorities, discharge; bottomry and respondentia obligations; salvage; general average. Open to second- and third-year law students. Ames, Cases on Admiralty. [Not given in 1912-13.]

2 units, 2d semester (HUSTON)

9. Roman Law.—A study of the Institutes of Gaius and Justinian and of selected titles from the Digest, Code, and Novels. A reading knowledge of Latin and of either German or French will be required. Open to second- and third-year law students. [Not given in 1912-13.]

2 units, both semesters (———)

10. Persons and Domestic Relations.—Marriage; promise to marry; marriage contract at common law and under statutes; rights of husband and wife in each other's property; status of married women; transactions between husband and wife; torts affecting marital relations; separation; divorce. Parent and child: custody; services and earnings; tort to children; torts by children; adoption; illegitimacy. Infancy: period of infancy; voidable acts; disaffirmance, ratification; contracts for necessaries; obligations created or authorized by law; liability for tort; guardian and ward. Insanity. Drunkenness. Alienage. Open to second- and third-year law students. Woodruff, Cases on Domestic Relations (2d ed.).

TTh 8:15 2 units, 2d semester (MCCLAIN)

11. Introduction to Property.—Distinction between real and personal property; acquisition of rights in personal property; gifts; bailment; lien; pledge. Real property: tenures; estates, seisin and conveyance; Statute of Uses; incidents of ownership in real property; fixtures; eas ments; covenants as to use; public rights; franchises; rents. Open to all law students. Gray, Cases on Property, Vols. I and II (2d ed.), and selected cases.

MTTh 10:15 3 units, both semesters (BINGHAM)

12. Title to Land.—Accretion; title by adverse possession, prescription; methods of transfer of interests in land at common law and under statutes; creation of interests in land by agreement or conveyance; interpretation of instruments of transfer; covenants running with the land; covenants for title; execution of deeds; fraudulent conveyances; recording. Open to second- and third-year law students. Gray, Cases on Property, Vol. III and part of Vol. IV (2d ed.).

MWThF 8:15 4 units, 1st semester (BINGHAM)

13. Wills and Administration.—Acquisition of property on the death of former owner, escheat, descent, occupancy, gifts mortis causa;

the making, revocation, and republication of wills, probate and administration, payment of legacies and distribution, ademption and lapse of legacies. Open to second- and third-year law students. Prerequisite: course 11. Gray, Cases on Property, Vol. IV (2d ed.), and selected cases. [Given in 1911-12 and in alternate years thereafter.]

4 units, 2d semester (BINGHAM)

15. Future Interests.—Vested and executory interests; construction of language creating future interests; powers; rule against perpetuities; provisions for forfeiture and restraints on alienation; the California law of future interests. Prerequisite: course 11. Open to second- and third-year law students. Gray, Cases on Property, Vol. V and part of Vol. VI (2d ed.), and selected cases. [Given in 1911-12 and in alternate years thereafter.] 4 units, 1st semester (BINGHAM)

16. Water Rights and Irrigation Law.—A course in the intensive study of the law of water, with especial reference to water rights in the Western States. Open to second- and third-year law students. Cases and legislative enactments.

MWF 8:15 3 units, 2d semester (BINGHAM)

17. Mining Law.—A course on mining titles under the Federal mining acts, with especial reference to mining rights in the Western States and Alaska. Open to second- and third-year law students. Costigan, Cases on Mining Law; and legislative enactments.

TTh 8:15 2 units, 2d semester (BINGHAM)

18. Torts.—Trespass to person, to real property, and to personal property; excuses for trespass; conversion; legal cause; negligence; contributory and imputed negligence; plaintiff's illegal conduct as a defense; duties of land-owners; hazardous occupations; liability for animals; deceit, defamation, slander, libel, privilege, malice; malicious prosecution, criminal and civil; interference with social and business relations, inducing breaches of duty, fair and unfair competition, strikes, boycotts, business combinations. Open to all law students. Cases on Torts: Ames, Vol. I (3d ed.); Smith, Vol. II (2d ed.).

MWF 9:15 3 units, both semesters (CATHCART)

19. Quasi Contracts.—Origin and nature of quasi contracts: Benefits conferred in misreliance on right or duty; general principles; misreliance resulting from mistake of law; misreliance on invalid contract, on contract unenforceable because of Statute of Frauds, on illegal contract, on contract impossible of performance, on contract unenforceable because of breach, on supposed requirement of valid contract, on non-contract obligation, on ownership of property: Benefits conferred through dutiful intervention in another's affairs: Benefits conferred

under constraint; constraint of duress, of legal proceedings, of tax or assessment: Action for restitution as alternative remedy for breach of contract and for tort. Open to second- and third-year law students. Woodruff, Cases on Quasi-Contracts.

TThF 9:15 3 units, 2d semester (WOODWARD)

20. Contracts.—Offer and acceptance; consideration; contracts under seal; contracts for the benefit of third persons; assignments; joint and several contracts; the Statute of Frauds; express and implied conditions; impossibility of performance; illegality; discharge of contracts. Open to all law students. Williston, Cases on Contracts.

MWF 8:15 3 units, both semesters (WOODWARD)

21. Bills and Notes.—This course considers all types of negotiable paper, and discusses in detail the law of bills of exchange, notes, and checks, including: formal requisites; acceptance; indorsement; transfer; extinguishment; obligation of parties; diligence; specialty character; the effect of the Negotiable Instruments Law. Open to second- and third-year law students. Smith and Moore, Cases on Bills and Notes. [Not given in 1912-13.] 4 units, 2d semester (———)

22. Sales.—Subject matter of sale; executory and executed sales; bills of lading and jus disponendi; seller's lien and right of stoppage in transitu; fraud; factors acts; warranty and remedies for breach of warranty; Statute of Frauds. Open to second- and third-year law students. Williston, Cases on Sales (2d ed.).

MTWTh 1:30 4 units, 1st semester (WOODWARD)

23. Agency.—Nature of relation; appointment; liabilities of principal for agent's torts, contracts, crimes; liabilities of agent; parties to writings; undisclosed principal doctrines; delegation of agency, termination; ratification. Prerequisites: first semester of courses 18 and 20. Open to all law students. Reinhard, Cases on Agency.

TTh 8:15, WF 10:15 4 units, 2d semester (KIRKWOOD)

24. Partnership.—Nature of a partnership, its purposes, and members; creation of partnerships; nature of partner's interest; firm name and good will; mutual rights and duties of partners; actions between partners, at law and in equity; powers of partners; liability for acts of partners in contract and tort; general liability of partners; dissolution and notice; consequences of dissolution; dissolution agreements respecting debts; distribution of assets to creditors, and between partners; limited partnerships. Open to second- and third-year students. Gilmore, Cases on Partnership. [Given in 1911-12 and in alternate years thereafter.] 3 units, 1st semester (HUSTON)

25. Private Corporations.—The nature of a corporation; the formation and organization of corporations; irregular incorporation; corporate powers; ultravires; promoters; directors; shareholders; creditors; stock, issue and payment, transfer. Open to third-year law students only. Warren, Cases on Corporations, and selected California cases. [Not given in 1912-13.] 4 units, 1st semester (HUSTON)

26. Public Service Companies and Carriers.—The nature, rights, and duties of public calling as exemplified by railway, telegraph, telephone, gas, water, irrigation, and other public service companies. Common carriers of goods and persons; liability; limitation of liability; bills of lading; stoppage in transitu; connecting carriers; tickets; baggage, compensation and lien. Open to second- and third-year law students. Wyman, Cases on Public Service Companies (2d ed.); also selected cases on carriers. [Given in 1911-12 and in alternate years thereafter.] 3 units, 2d semester (CATHCART)

26a. Carriers.—Common carriers of goods and persons; liability; limitation of liability; bills of lading; stoppage in transitu; connecting carriers; tickets; baggage, compensation and lien. McClain, Cases on Carriers. [Given in 1912-13 only.]

MT 10:15 2 units, 2d semester (McCLAIN)

27. Bankruptcy.—Jurisdiction of the United States and the States; who may be a bankrupt; who may be petitioning creditors; acts of bankruptcy; where property passes to the trustee; provable claims; protection; exemptions and discharge. Open to second- and third-year law students. Williston, Cases on Bankruptcy. [Given in 1911-12 and in alternate years thereafter.]

2 units, 1st semester (WOODWARD)

28. Insurance.—Marine, fire, and life insurance. Insurable interest in various kinds of policies; concealments; misrepresentations; warranties and other matters affecting the validity of the contract; amount of recovery; subrogation; waiver, estoppel, election; powers of agents; assignees and beneficiaries. Open to second- and third-year law students and to others by special permission. Wambaugh, Cases on Insurance.

WF 10:15, T 11:15 3 units, 2d semester (McCLAIN)

29. Suretyship.—Personal suretyship compared with real suretyship (mortgages, pledges, liens, etc.); suretyship obligations compared with insurance and indemnity obligations; guaranty and other forms of suretyship in relation to the Statute of Frauds; suretyship in transactions involving negotiable instruments; fidelity contracts and judicial

bonds; surety's defenses due to original defects in his obligation or to its subsequent discharge; surety's right to subrogation, indemnity, contribution or exoneration; creditor's right to surety's securities. This course must ordinarily precede that on Mortgages. Open to second- and third-year law students. Ames, Cases on Suretyship. [Given in 1911-12 and in alternate years thereafter.]

3 units, 2d semester (WOODWARD)

30. Mortgages.—All forms of mortgage security, both real and chattel; essential elements of legal and equitable mortgages; legal and equitable rights, powers and remedies of mortgagor and mortgagee with respect to title, dower, curtesy, possession, rents and profits, waste, collateral agreements, foreclosure, redemption; priorities; marshaling; extension of mortgages; assignment of mortgages; discharge of mortgages. This course must ordinarily be preceded by that on Suretyship. Open to second- and third-year law students. Kirchwey, Cases on Mortgage. [Given in 1913-14 and in alternate years thereafter.] 3 untis, 2d semester (HOHFELD)

31. Equity I: Trusts.—Historical development of equity; relation between equitable rights and powers and legal rights and powers; jurisdiction, procedure and remedies of courts of equity; general principles of the Anglo-American system of uses and trusts considered in comparison with closely related legal and equitable relations; the creation, the transfer, the execution, and the extinguishment of all forms of trusts, express, resulting, and constructive; the special doctrines of charitable trusts, including interpretation and *cy pres;* priorities as between all forms of competing equities; the construction of trust deeds and wills. Open to all law students. Ames, Cases in Equity Jurisdiction, Vol. I (in part); Ames, Cases on Trusts (2d ed.).

TTh 9:15, MW 11:15 4 units, 2d semester (HOHFELD)

32. Equity II: Contracts and Torts.—The equitable relations and remedies involved in obligations *ex contractu* and obligations *ex delicto* considered in respect to their interplay with the corresponding legal relations and remedies; specific performance of contracts, with emphasis on the special trust relations arising under executory contracts between vendors and purchasers of realty; specific prevention and specific reparation of torts: prohibitory and mandatory injunctions for such torts as waste, trespass, nuisance, infringement of patents and copyrights, interference with business relations, violation of rights of privacy. Open to second- and third-year law students. Ames, Cases in Equity Jurisdiction, Vol. I. [Not given in 1912-13.]

4 units, 1st semester (HOHFELD)

33. Equity III: Interpleader, Bills of Peace, etc.—Special equitable remedies, including: interpleader; bills of peace and *quia timet;* cancellation of contract; clouds on title; perpetuation of testimony; rights of future enjoyment; reformation and rescision of contract; mistake, fraud, misrepresentation; duress and undue influence. Open to second- and third-year law students. Ames, Cases in Equity Jurisdiction, Vol. II.

TTh 8:15 2 units, 1st semester (KIRKWOOD)

34. Damages.—Respective functions of court and jury in estimating damages; exemplary, liquidated, nominal, direct, and consequential damages; avoidable consequences; counsel fees; certainty, compensation, damages for non-pecuniary injuries; value; interest; and damages in certain actions of tort and contract. Open to second- and third-year law students. Beale, Cases on Damages (2d ed.). [Given in 1911-12 and in alternate years thereafter.] 2 units, 2d semester (CATHCART)

35. Pleading.—*Part I.* A general survey of the common law, equity, and code systems of pleading, based upon lectures, assigned readings, and a study of selected forms. *Part II.* An intensive case study of the fundamental principles of pleadings: the statement of a cause of action; demurrers, general and special; default; negative answers or pleas by way of traverse; affirmative answers or pleas in confession and avoidance; dilatory pleas; several pleas; replies or replications; departure; new assignment; amendment of pleadings; set-off and counterclaim; motions based on the pleadings; error and appeal on the pleadings. Open to second- and third-year law students. Ames, Cases on Pleading (2d ed.); also selected cases.

TTh 10:15, MW 11:15 4 units, 1st semester (CATHCART)

36. Evidence.—Respective functions of judge and jury; "law and fact"; presumptions; burden of proof; judicial notice; classification of evidence; relevancy as primary test of admissibility; principles and rules relating to the following: misleading or unimportant matters, character, admissions, confessions, hearsay, witnesses' opinions and expert testimony, real evidence, evidence relating to execution, contents and interpretation of writings; various rules of substantive law stated in terms of "parol evidence rule"; competency of witnesses; privilege of witnesses; impeachment and confirmation of witnesses; examination of witnesses. A few extra sessions will be held for the purpose of affording actual practice in the presentation of evidence and the examination of witnesses. Open to students having 31 units of credit

toward the J. D. degree. Thayer, Cases on Evidence (2d ed.); also selected cases.

TThF 11:15 3 units, both semesters (Hohfeld)

37. **California Practice.**—Organization and jurisdiction of courts; court records and files; proceedings prior to judgment, including: service and return of summons and motions relating thereto, appearances, provisional remedies, such as attachment, arrest, etc., *lis pendens,* the trial, exceptions and findings, verdict; the judgment, its entry and satisfaction; proceedings subsequent to judgment, including: stay of execution, costs, execution, motion for new trial, appellate proceedings; probate and administration proceedings; special proceedings, including writs of *certiorari,* mandamus, and prohibition; introduction to jurisdiction and procedure of Federal courts. Prerequisite: course 35. Open to students having 43 units toward the J. D. degree. California Code of Civil Procedure; also selected California cases.

ThS 11:15, T 1:30 3 units, 2d semester (Charles)

Instruction in Practice

A special effort is made to impart to the student a thorough knowledge of the rules of procedure and practice, and to enable him to acquire a creditable degree of skill and facility in the application of such rules to conditions of actual litigation. To these ends, courses are offered in Common Law, Equity and Code Pleading, and in California Practice. In the last-mentioned course particularly the student is afforded practical experience in the commencement of actions, the preparation of pleadings, the trial of issues of fact, and the argument of questions of law. Likewise, in connection with the course in Evidence, extra sessions of the class are held for the purpose of exemplifying the actual methods of introducing evidence and examining witnesses.

Moot Courts

Law clubs have been organized by the students for the purpose of holding moot courts for the argument of questions of law. This work is voluntary, but is carried on with the advice and assistance of the Faculty. Moot courts are also conducted by the local chapters of the Phi Delta Phi, Delta Chi, and Phi Alpha Delta fraternities.

Public Speaking

Courses in the principles of vocal expression in public speaking, and in oral debate, offered by the University, may be elected by students in Law. Law students are eligible to membership in the two debating societies of the University. They may compete for the Carnot Debate medal, and for positions on the University Intercollegiate Debate team.

Admission to the Bar

It is provided by Section 280*b* of the California Code of Civil Procedure, that any person producing evidence of having satisfactorily completed the three years' course of law study prescribed by this Law School, shall be entitled to a license to practice law in all the courts of the State, subject to the right of the chief justice of the Supreme Court to order an examination, as in ordinary cases of applicants without such evidence. The certificate required by the statute will be issued, upon request, to any regular or special student who shall have received an aggregate of 75 units of credit in the Law School, including credit in Pleading and California Practice and excluding credit in the course in Introduction to the Study of Law, and who, in addition thereto, shall have received credit in the course in English Composition (English 2).

General Regulations

To receive credit in any course in the Law School, a student must obtain a minimum grade of fifty per cent in classroom work and also in the written examination held at the end of the course. His average for the two must reach sixty per cent. In estimating this average the final examination will count two-thirds and the classroom work one-third. The right to take the final examination is conditioned on regular attendance and the maintenance of the required grade for class work.

A student whose average standing is between fifty and sixty will be given a *condition* and one whose grade is below fifty will be given a *failure*. A *condition* requires a re-examination and a *failure* a repetition of the entire course. As a rule, examinations to remove conditions may be taken only at the next regular examination period for the particular course.

No student may register for more than fifteen hours of law per week. A student may register as visitor in any course in which he is entitled to register as a regular student, provided that such registration shall not give him more than fifteen hours of law.

Fees and Expenses

For professional law courses tuition fees are charged as follows: to students registering for thirteen or more units in law in any semester, twenty-five dollars per semester; to students registering for less than thirteen units in law in any semester, two dollars per unit per semester. Beginning with the academic year 1913-14, the tuition fee will be fifty dollars per semester, the increase not to apply to students registered in the Law Department on or before March 31, 1910.

All undergraduate students in the University are charged an incidental fee of fifteen dollars per semester; but in the case of undergraduates who are taking law courses, the incidental fee, or such portion thereof as may be required, is applied in payment of the charge for tuition.

A syllabus fee of fifty cents per semester is charged in all law courses except the following: Introduction to the Study of Law, one dollar; Introduction to Property, and Pleading, two dollars and a half; Torts, one dollar and a half; Water Rights, three dollars and a half; California Practice, five dollars. A diploma fee of five dollars is payable before graduation.

The cost of text-books in the law courses will average twenty-five dollars per year for the three years of the professional curriculum.

GRAPHIC ART

Arthur Bridgman Clark, Associate Professor.
Robert Bartholow Harshe, Assistant Professor.
Chloe Lesley Starks, Instructor.

The Department aims to meet the needs of three classes of students: students who wish training in artistic perception and graphic expression for its general culture value; students who wish to begin professional art study while receiving other university training; and technical students to whom knowledge of representative drawing is essential.

Course 1 or its equivalent must precede all other courses excepting courses 6, 8, and 9. Technical courses may receive credit a second time when continued with sufficient skill.

For students making Graphic Art their major study the following is an average programme: Elementary Still Life (4 units), and Linear Drawing and Lettering (1 unit), or Still Life (2 units); Landscape (3 units); Organic Form (3 to 5 units); Perspective (2 units). Total, 9 to 11 units the first year.

Design (6 units); Handicraft (4 units); Lectures (4 units). Total, 14 units the second year.

Life (5 units); Color (5 units); Teachers' course (3 units). Total, 13 units the third year.

Illustration or Landscape (10 units); Handicraft (4 units). Total, 14 units the fourth year.

The Teachers' Recommendation.—The minimum requirement for the High School recommendation in Graphic Art is course 1 (3 units);

chosen from courses 2, 3, and 5 (6 units); courses 10 and 11 (3 units each), course 13 (4 units). Total, 19 units.

1. Elementary Drawing.—Introductory course; still-life and drawing in the arcades in charcoal and color. Open to all students.

MTWTh 1:30-4:30 2 to 4 units, either semester. (STARKS)

2. Drawing of the Head.—From the cast.

MTWThF 1:30-4:30 3 to 5 units, either semester (HARSHE)

3. Drawing of the Head.—A continuation of course 2 from life. Open to second-year students.

MTWThF 1:30-4:30 3 to 5 units, either semester (HARSHE)

4. Color.—Still-life painting in oils or water-colors. Open to students with six units of drawing.

By arrangement 2 to 5 units, either semester (HARSHE, STARKS)

5. Landscape.—Outdoor work. Charcoal, colored crayon, or oil paint is used in accordance with the capacity and needs of each student.

MTW 1:30-4-30 3 units, 1st semester (CLARK)

6. Lectures.—Ideals and processes in pictorial and applied art. (First semester) Masters of the Renaissance; (Second semester) Nineteenth Century and living painters. Open to all students.

TTh 11:15 2 units, 1st semester or both semesters (CLARK)

7. Organic Form.—Drawing shells, leaf sprays, animal forms, and landscape with reference to decorative elements. The course is conducted primarily as a preparation for design.

MTW 1:30-4:30 3 units, 2d semester (CLARK)

8. Scientific Perspective.—A series of problems involving the mathematical principles of perspective, and the application of these principles to actual buildings and objects. [Course 8 is offered in alternate years; given in 1912-13.]

TTh 10:15 2 units, 2d semester (CLARK)

9. Science Drawing.—A course designed to assist students in scientific illustration. It includes the drawing of simple scientific subjects in pen outline, line and stipple shading, wash, and line and wash. Especial attention will be paid to the needs of individual students. Open to science students on advice.

TWThF 1:30 2 units, either semester (STARKS)

10. Teachers' Course.—For intending teachers and supervisors of drawing. Consisting of lectures upon methods and aims in school curricula and in the practical work of preparing courses of study.

Open to advanced students only. [Offered in alternate years; given in 1912-13.]

TTh 9:15 3 units, 2d semester (Clark, Harshe)

11. Design.—(First semester) Exercises in the principles of abstract design, decorative design, and the handicrafts generally. (Second semester) Application of the principles to house planning and interior household fittings.

MTW 1:30-4:30 3 units, both semesters (Clark)

12. Illustrating.—Practice in application of life drawing to specific purposes. Must be preceded by course 3.

MTWThF 1:30-4:30 2 to 5 units, both semesters (Harshe)

13. Handicraft.—Exercises in textiles, leather, metal work, pottery, etc. To follow or accompany course 11.

ThF 1:30-4:30 2 units, either semester (Clark)

MATHEMATICS

†Robert Edgar Allardice, Rufus Lot Green, Professors.
Hans Frederick Blichfeldt, Associate Professor.
William Albert Manning, Assistant Professor (Applied Mathematics).

The courses in this department have been arranged to meet the wants of two classes of students—students whose major subject is Mathematics, and students who, while taking their major in some other department, desire to include some mathematics in their course. Students in Engineering are provided for in the Department of Applied Mathematics.

For students whose major subject is Mathematics the following programme of work is recommended: In the first year, courses 3 and 4; in the second year, course 9, and 10 or 21; in the third year, courses 11, 12, and 15; while the work during the fourth year and for graduate students may be selected from the remaining courses, and from the Department of Applied Mathematics. The advanced courses will, for the most part, be given once in two or once in three years, and it is hoped that the advanced students will thus have the opportunity of studying the more important branches of modern mathematics.

Students whose major subject is Mathematics are recommended to begin the study either of French or of German in their freshman year.

†Absent on leave, 1912-13.

Students who desire to take one or more years of Mathematics as a part of a liberal training are recommended to begin their work in this Department with one or more of the courses 1, 2, 3, 6, and 7.

The Teacher's Recommendation.—For the High School recommendation in Mathematics the following courses are required: 1, 2, 3, 4, 9, and 10 or 6.

1. Trigonometry.—Elementary course, with applications involving logarithmic calculation.

TTh 9:15 2 units, 1st semester (MANNING)

2. Solid Geometry.—Elementary course.

TTh 9:15 2 units, 2d semester (BLICHFELDT)

3. Algebra.—Fundamental laws, degree, symmetry, indeterminate coefficients, remainder theorem, factors, complex numbers, introduction to theory of equations, progressions, permutations and combinations. Presupposes entrance credit in Elementary Algebra.

MTWThF 8:15 5 units, 1st semester (GREEN)

4. Co-ordinate Geometry.—An elementary course in the analytic geometry of the conic sections, including the discussion of the general equation of the second degree. Presupposes course 3.

MTWThF 8:15 5 units, 2d semester (GREEN)

[Students making Mathematics their major subject should take courses 3 and 4 as the first year's work, and those who have not had Trigonometry should also take course 1.]

6. Plane Geometry.—This course includes a rapid revision of elementary geometry, together with additional theorems and references to modern theories. It is recommended to those who expect to teach mathematics, and presupposes entrance credit in Plane Geometry. [Not given in 1912-13.] 2 units, both semesters (ALLARDICE)

7. General Course.—A brief and elementary survey of the principles of Algebra, Trigonometry, Co-ordinate Geometry, and Calculus. Presupposes elementary algebra and plane geometry.

MWF 10:15 3 units, both semesters (MANNING)

9. Differential and Integral Calculus.—Lectures on the Differential and Integral Calculus, with applications to the theory of plane curves, on the lines of Williamson's treatises.

MWF 9:15 3 units, both semesters (BLICHFELDT)

10. Advanced Co-ordinate Geometry.—A continuation of course 4, including the elements of the Theory of Determinants.

TTh 9:15 2 units, both semesters (GREEN)

11. Advanced Calculus.—A continuation of course 9.
3 units, 1st semester (MANNING)

12. Theory of Functions.—Elementary course. [Not given in 1912-13.] 3 units, 2d semester (MANNING)

13. Non-Euclidean Geometry.—Presupposes a course in Calculus.
TTh 10:15 2 units, 1st semester (BLICHFELDT)

14. Modern Co-ordinate Geometry.—[Not given in 1912-13.]
3 units, 2d semester (GREEN)

15. Differential Equations.—
MWF 10:15 3 units, both semesters (BLICHFELDT)

16. Definite Integrals.—[Not given in 1912-13.]
3 units, 2d semester (ALLARDICE)

17. Solid Co-ordinate Geometry.—
MWF 11:15 2 units, both semesters (MANNING)

18. Theory of Equations.—[Not given in 1912-13.]
3 units, both semesters (GREEN)

19. Reading Course.—In this course the students will read French and German text-books under the direction of the instructors. [Not given in 1912-13.]
2 units, both semesters (ALLARDICE, BLICHFELDT)

20. Theory of Groups.—[Not given in 1912-13.]
2 or 3 units, 1st semester (BLICHFELDT)

21. Projective Geometry.—[Not given in 1912-13.]
2 units, both semesters (ALLARDICE)

22. Theory of Algebraic Numbers.—
MWF 11:15 3 units, both semesters (BLICHFELDT)

23. Vector Analysis.—(Gibb's System.)
TTh 8:15 2 units, 2d semester (MANNING)

24. Teachers' Course.—
TTh 11:15 2 units, 2d semester (GREEN)

APPLIED MATHEMATICS

LEANDER MILLER HOSKINS, Professor.
HALCOTT CADWALADER MORENO, SIDNEY DEAN TOWNLEY, Associate Professors.
WILLIAM ALBERT MANNING, ERNEST WILLIAM PONZER, Assistant Professors.
LEONARD LUNDGREN, Instructor.

Under Applied Mathematics are included the courses in mathematics which are required of students in Engineering. The aim is to make these courses practical in the sense of furnishing thorough drill on fundamental principles and much practice in their application. Emphasis is laid upon accuracy and system in the solution of numerical problems. Students whose training in arithmetical work has been deficient, or who are otherwise inadequately prepared, or who lack aptitude for mathematical study, can not pursue these courses successfully.

Courses A and B are the equivalents of the corresponding entrance subjects, and are prerequisites to the regular first-year work.* Course 1 embraces the regular first-year work, and courses 2 and 3 the regular second-year work. Students deficient in the work of the first year are not admitted to second-year courses. This requirement will be strictly enforced, whether the previous work has been taken in this University or elsewhere.

A. Solid Geometry.—This presupposes Plane Geometry, and is not required of those having entrance credit in Solid Geometry.

TTh 9:15 2 units, 1st semester (LUNDGREN)

B. Trigonometry.—This is equivalent to entrance Trigonometry, and is not open to students having entrance credit in this subject. Plane Geometry is a prerequisite.

MWF 10:15 3 units, 2d semester (LUNDGREN)

1. First-year Mathematics.—This course embraces (*a*) Algebra, (*b*) Trigonometry, (*c*) Co-ordinate Geometry, approximately equal periods being given to the three subjects. The work begins with a rapid review of Elementary Algebra, intended to test the student's familiarity with fundamental principles and operations, those showing deficient preparation not being permitted to continue. This review is followed by more advanced work in Algebra, but emphasis is laid on the thorough mastery of the ordinary rules rather than on covering a large amount of ground. In the second part of the course much attention is paid to reviewing and enforcing the fundamental principles of Plane Trigonometry, and especially to the numerical solution of triangles using both natural and logarithmic functions. In Co-ordinate Geometry it is aimed to familiarize the student with the method of co-ordinates, so that he can apply it independently to simple problems, rather than to devote much attention to a detailed study of the properties of the conic sections or other curves. The course is open to

*It is not intended to offer these courses permanently, but a year's notice will be given of their withdrawal.

students having entrance credit in Algebra (at least 1½ units), Plane and Solid Geometry, and Plane Trigonometry.

MTWThF 8:15, 10:15, 11:15
5 units, both semesters (PONZER, LUNDGREN)

2. Calculus.—An elementary course on Differential and Integral Calculus, in which emphasis is laid on fundamental principles and simple applications. 3 units, both semesters

MWF 9:15 (MORENO, MANNING, PONZER)

3. Theoretical Mechanics.—An elementary course, covering the fundamental principles of Statics, Kinematics, and Kinetics, restricted mainly to coplanar forces and to plane motion of particles and of rigid bodies. An elementary treatment of Graphic Statics is included. The course is designed as a preparation for the courses in Applied Mechanics taken by students of Engineering, but is open to all whose preparation includes the equivalent of course 1. Calculus must either precede this course or be taken at the same time.

MTWThF 10:15 5 units, both semesters
(HOSKINS, MORENO, TOWNLEY)

In addition to the foregoing, which are required of all students of Engineering, the following elective courses are offered:

4. Adjustment of Observations.—Theory of the method of least squares, with applications. Credit in course 2 or its equivalent is a prerequisite. [Given in alternate years; not given in 1912-13.]
2 units, 2d semester (TOWNLEY)

5. General Astronomy.—This course consists of a general survey of the various branches of astronomy, including a study of the celestial sphere, the bodies of the solar system, comets, the fixed stars, and other heavenly bodies. The treatment is essentially non-mathematical.

MWF 11:15 3 units, 1st semester (TOWNLEY)

5a. Practical Astronomy.—The theory and practice of the determination of latitude, azimuth, time, and longitude. Intended especially to meet the requirements of students of Civil Engineering. Course 1, Differential Calculus, and Surveying are prerequisites.

MWF 11:15 3 units, 2d semester (TOWNLEY)

5b. Advanced Practical Astronomy.—Students who have finished course 5*a* may continue this line of work by selecting special topics or problems for investigation. Hours and credit to be arranged.
(TOWNLEY)

Additional courses in Practical Astronomy and in Geodesy may be arranged for students qualified to pursue them to advantage.

6. Graduate Courses.—Advanced courses in Theoretical Mechanics, Hydromechanics, Theory of the Potential Function, Theory of Elasticity, or other subjects, may be arranged for students having the requisite mathematical training.

PHYSICS

FERNANDO SANFORD, Professor.
FREDERICK JOHN ROGERS, Associate Professor.
ELMER REGINALD DREW, JOSEPH GRANT BROWN, Assistant Professors.
PERLEY ASON ROSS, Instructor.

Courses 1, 2, 3, 4, and 5 constitute a course in General Physics, and are intended to precede the advanced courses.

1. Dynamics.—Including hydrostatics and pneumatics. Open only to students who have had Algebra and Plane Geometry. Required as a preparation for each of the courses following (except 6 and 7). One lecture and two laboratory periods per week.

Lec. W 1:30; Lab. TTh 9:15-12:15 (1st sem.), MWF 1:30-4:30
3 units, either semester (Ross)

2. Electricity and Magnetism.—One lecture and two or three laboratory periods per week. Prerequisite: course 1, or its equivalent.

Lec. F 1:30; Lab. WThF 1:30-4:30
3 or 4 units, 1st semester (DREW)

3. Heat.—One lecture and two laboratory periods per week. Prerequisite: course 1. 3 units, 2d semester (Ross)

Lec. T 10:15; Lab. MT 1:30-4:30

4. Sound.—Including wave-motion. Prerequisite: course 1, and Trigonometry.

Lab. MTW 1:30-4:30 3 units, 1st semester (BROWN)

5. Elementary Optics.—Three laboratory periods per week Prerequisites: course 1, and Trigonometry.

Lab. WThF 1:30-4:30 3 units, 2d semester (BROWN)

6. A course intended primarily for students in Engineering but open to others who have had equivalent preparation. Three experimental lectures and recitations and one laboratory period per week. Prerequisite: entrance Physics, and course 3 in Applied Mathematics, or may be taken concurrently with the latter.

a. Heat, Light, and Sound. 4 units, 1st semester (BROWN)

Lec. MWF 11:15; Lab. W or Th or F 1:30-4:30

b. Electricity and Magnetism. 4 units, 2d semester (ROGERS)
Lec. MWF 11:15; Lab. W or Th or F 1:30-4:30

7. A general, non-mathematical course in Physics intended primarily for students in Biological Science and students preparing for the study of Medicine but open to others. Two lectures and two laboratory periods per week throughout the year.
Lec. MW 10:15; Lab. MT 1:30-4:30
4 units, both semesters (DREW)

8. Mechanical Measurements.—A course in exact measurements of mass, length, time, and gravity, using balance, dividing engine, cathetometer, chronograph, etc. Two laboratory periods per week. Prerequisite, course 1.
Lab. MT 1:30-4:30 2 units, 2d semester (BROWN)

9. Electrical Measurements.—Open to students who have taken course 2 or course 6*b*. 4 units, 1st semester (ROGERS)
Lec. Th 8:15; Lab. MTW 1:30-4:30

9a. Photometry and Illumination.—Open to students who have completed course 9.
By arrangement 1 unit, 2d semester (ROGERS)

10. Advanced Optics.—Two laboratory periods per week. Prerequisite, course 5.
Lab. MT 1:30-4:30 2 units, 2d semester (SANFORD)

11. General Physics.—Lectures. Prerequisites, courses 1, 2, 3, 4, and 5, or their equivalent.
MTWThF 11:15 5 units, both semesters (SANFORD)

11a. The Literature of Physics.—Open to students who have the preparation required for Physics 11. A general review of the literature of Physics, especially journal literature.
2 units, 2d semester (SANFORD)

12. Analytic Mechanics.—Lectures. Prerequisites, course 1 and the Differential and Integral Calculus.
By arrangement 4 units, 2d semester (DREW)

13. Teachers' Course in Elementary Physics.—Prerequisites: courses 1, 2, 3, 4, and 5, or their equivalent.
W 10:15 1 unit, both semesters (SANFORD)

14. Advanced Heat.—Lectures on selected topics, including the elements of Kinetic Theory and Thermodynamics. Prerequisites: courses 1 and 3, and Calculus.
By arrangement 3 units, 2d semester (DREW)

15. Vibratory Motion.—Recitations and lectures illustrated by occasional lecture experiments and a few carefully executed laboratory

experiments. A knowledge of Differential and Integral Calculus is required.

By arrangement 3 units, 1st semester (Rogers)

16. Physical Theory of Electricity.—

2 units, 2d semester (Sanford)

17. History of Physics.—Lectures and readings on the history of physical science with special reference to the development of theories. Prerequisites: courses 1, 2, 3, 4, and 5.

By arrangement 2 units, 2d semester (Rogers)

18. Advanced Electricity.—Recitations and lectures illustrated by occasional lecture experiments and a few carefully executed laboratory experiments. Prerequisites: courses 2 or 6*b*, 9, and Calculus.

By arrangement 4 units, 1st semester (Rogers)

19. Investigation of Original Problems in the Laboratory.—Hours to be determined in each case.

By arrangement (Sanford)

For graduation in the department the minimum requirement is 40 hours of Physics and Chemistry, of which at least 30 hours must be Physics. All elementary courses except 6 and 7 are suitable for Physics majors.

The Teacher's Recommendation.—The minimum requirement is courses 1, 2, 3, 4, 5, or an equivalent, and course 13.

Laboratory Fees.—Courses 1, 2, 3, 4, 5, 7, and 8, $4 each per semester; course 6*a* and 6*b*, $3 each, per semester; course 9, $5 per semester; course 19, $2 per unit per semester.

CHEMISTRY

John Maxson Stillman, Lionel Remond Lenox, †Edward Curtis Franklin, Stewart Woodford Young, Robert Eckles Swain, Professors.

John Pearce Mitchell, Assistant Professor.

William Henry Sloan, Harry Johnson Sears, George Shambaugh Bohart, Instructors.

Alice Ruth Berger, Acting Instructor.

Win Rawdon Goddard, Edwin Reginald Harding, Hugh Harold Mosher, Robert Lindley Murray, Zeno Ostenberg, Louis William Pingree, Francis Sitwell Pratt, William John Van Sicklin, Waldo Ralph Waelty, Assistants.

†Absent on leave, 1912-13.

I. Lecture Courses

1. General Inorganic Chemistry.—Comprising a systematic treatment of elementary principles and of the properties of the more important elements and their compounds. Open to all students. Those not having entrance credit in Chemistry will register in a three-hour section for the first semester and in laboratory course *a*I.

(I) MWF 8:15; (II) TTh 11:15
2 or 3 units, 1st semester; 2 units, 2d semester (Mitchell)

2. Principles of General and Inorganic Chemistry.—Discussion of the elements of chemical theories and of important generalizations in the field of inorganic chemistry. Open to all students who have completed courses in 1 and *a*II.

MWF 11:15 3 units, both semesters (Stillman)

3. Organic Chemistry.—Lectures and reviews on the chemistry of carbon compounds. Open to students who have completed courses 1 and *a*.

TTh 10:15 2 units, both semesters (Swain)

[A condensed course in organic chemistry is offered for students in medicine. See Department of Medicine, Division of Chemistry, course 1.]

4. Industrial Chemistry.—Lectures on fuels, water, acid and alkali manufacturing, explosives, sugar-making and refining, petroleum. Open to students who have completed courses 2 and 3; or may be taken concurrently with course 3.

MF 9:15 2 units, both semesters (Stillman)

5. History of Chemistry.—Open to students who have completed courses 2 and 3.

TTh 9:15 2 units, 1st semester, in alternate years (Stillman)

6. Qualitative Analysis.—In connection with laboratory course *b*.

T 1:30 1 unit, either semester (Lenox)

7. Advanced Organic Chemistry.—Advanced topics in organic chemistry, including stereochemistry. Open to students who have completed courses 2 and 3. [Not given in 1912-13.]

2 units, both semesters, in alternate years (Franklin)

8. General Physical Chemistry.—Lectures covering as far as possible the whole field of physical chemistry. Open to students who have completed courses 2 and *d* in Chemistry, courses 3 and 9 in Mathematics, and course 1 in Physics (course 2 being also recommended).

MWF 8:15 3 units, both semesters (Young)

9. Physical-Chemical Measurements.—An informal course of lectures given as needed in connection with course *f*.

By arrangement — No credit (YOUNG)

10. Applied Physical Chemistry.—For students in Analytical Chemistry and Metallurgy.

MW 9:15 — 2 units, 2d semester (YOUNG)

11. Physiological Chemistry.—Lectures on the chemical composition and action of the tissues and secretions of the animal body, the digestion of foods, and the elimination of waste products. Open to students who have completed course 3.

MWF 11:15 — 3 units, 1st semester (SWAIN)

12. Seminary in Chemistry.—Discussion of assigned topics in theoretical and general chemistry. Open to graduate students, and to advanced undergraduates in Chemistry, with the approval of the Faculty in Chemistry

W 4 — 1 unit, both semesters

II. LABORATORY COURSES

a. General Inorganic Chemistry.—In connection with course 1.

*a*I. Illustrating fundamental laws and principles of elementary chemistry, for students who have not received entrance credit in Chemistry.

MT or ThF 1:30-4:30 — 2 units, 1st semester (MITCHELL, SEARS)

*a*II. Inorganic preparations and general chemistry. For students who either have completed *a*I or have received entrance credit in Chemistry.

MT or ThF 1:30-4:30 — 2 units, either semester (MITCHELL, SEARS)

b. Qualitative Analysis.—Open to students who have completed courses 1 and *a*II. — 3 afternoons, either semester

By arrangement (LENOX, BERGER)

c. Preparation of Typical Carbon Compounds.—Open in connection with course 3 to students who have completed course *b*.

By arrangement — 3 afternoons, either semester (SWAIN, BOHART)

d. Quantitative Analysis.—Training in manipulation in gravimetric and volumetric methods. Work begins either semester. Students in other departments than Chemistry may register for three afternoons if they cannot arrange for four, as is recommended. Open to students who have completed courses 6 and *b*.

By arrangement — 4 afternoons, either semester (SLOAN)

e. Mineral Analysis.—Systematic analysis of representative minerals. Open to students who have completed course *d*, and required of students whose major subject is Chemistry, unless *f* or *g* be elected instead. 4 afternoons, either semester

By arrangement (STILLMAN, LENOX, SLOAN)

f. Physical-Chemical Measurements.—Exercises in the practice of physical-chemical laboratory methods. Open to students who have completed or are taking course 8, and who have completed course *d*.

By arrangement 3 or 5 units, either semester (YOUNG)

g. Physiological Chemistry.—A laboratory course including a preliminary study of the proteins, carbohydrates, and fats, and the action of the various digestive fluids upon them, followed by a chemical examination of the bile, blood, milk, the chief tissues of the animal body, and the excretions. In connection with course 11.

By arrangement 3 afternoons, 1st semester (SWAIN)

h. Assaying.—Open to students who have completed course *d*.

Lab. by arrangement; Lec. Th 1:30

3 afternoons, either semester (LENOX)

i. Physical-Chemical Laboratory.—A course recommended in connection with Chemistry 10.

By arrangement (YOUNG)

k. Analytical Chemistry.—A condensed course intended exclusively for students preparing for medicine. Not open to chemistry majors, and not accepted in place of the regular courses in qualitative and quantitative analysis as prerequisites for advanced laboratory courses, with the exception of physiological chemistry for medical students.

[Students preparing for Medicine who have, however, already completed the regular course in Qualitative Analysis (6 and *b*), may register for *kb* for two hours credit.]

In 1912-13 the course *kb* must be begun by March 10th. The class will be expected to finish *ka* by that date.

ka. Qualitative Analysis.—Brief course. Credit deferred until *kb* is also completed. 2 units (LENOX)

kb. Quantitative Analysis.—Brief course. 2 units (SLOAN)

Course *k* (*a* and *b*) must be registered at the same time—for four units total credit. 4 units, 2d semester

x. Advanced and Special Courses in laboratory work and research work are open to students who have completed the necessary prerequisites, by arrangement with professors of the Department and with reference to the particular aims and ambitions of the students. Such

advanced or special subjects are, for example: special methods in mineral analysis, iron and steel analysis; special methods in assaying; water analysis; food analysis; urine analysis; elementary organic analysis; special organic preparation; analysis of sugar, toxicology, etc.

Qualified students may also pursue investigations of problems in inorganic, organic, physical, analytical, or physiological chemistry under the direction of any professor with whom arrangement is made.

For all such advanced, special, or research work, students will register and enroll under *x*, giving name of professor under whom the work is to be carried on, and for such number of units of credit as may be agreed upon.

Candidates for the degree of Bachelor of Arts in Chemistry may select any one of the four following curricula (A, B, C, D), the requirements of the Department being as follows:

A. General Chemistry

First Year:—Chemistry 1, *a;* Physics 1; Mathematics 3; German 1.

Second Year:—Chemistry 2, 6, *b;* Mathematics 9; German 2*a*.

Third and Fourth Years:—Chemistry *d*, 3, *c*, 8, *f*.

Recommended for all who are studying the science of chemistry for its own sake or for the profession of teaching.

B. Analytical Chemistry

First Year:—Chemistry 1, *a;* Physics 1; German 1.

Second Year:—Chemistry 2, 6, *b;* Geology 1, 2; German 2*a*.

Third and Fourth Years:—Chemistry *d*, *e*, *c*, *h*, 3, 10; Geology 5.

Particularly adapted to students who are looking forward to the career of analytical chemist and assayer.

C. Medical or Sanitary Chemistry

First Year:—Chemistry 1, *a;* Physiology 1; German 1.

Second Year:—Chemistry 2, 6, *b;* Physics 7; German 2*a*.

Third and Fourth Years:—Chemistry 3, *c*, *d*, 11, *g*.

Particularly adapted to students who are looking forward to medical education or to sanitary chemistry.

D. Chemical Engineering

This curriculum comprises four years of the necessary five years' work leading to the advanced degree of *Engineer* in Chemical Engineering. Candidates in this course receive the degree of A. B. in Chemistry upon completion of the following requirements:

First Year:—Chemistry, 1, *a;* Applied Mathematics A, B, 1; German 1.

Second Year:—Chemistry 2, 6, *b*, *d*; Applied Mathematics 2, 3.

Third Year:—Chemistry 3, *c*; Engineering 1*a*, 1*b*, 2; Physics 1, 2 (or 6*a* and 6*b*); German 2*a*.

Fourth Year:—Chemistry 4, *e* (or *h*); Mechanical Engineering 11, 13; Metallurgy 9; Engineering 3*a*.

Intended particularly for students who are working toward the degree of Chemical Engineer and who desire to fit themselves for positions of responsibility in connection with the administration of industries involving chemical knowledge and skill.

Advanced Degrees

Applicants for the degree of *Master of Arts* in Chemistry will be expected to complete, in addition to the requirements for the bachelor's degree, the equivalent of thirty units' work in the University—of which approximately two-thirds must be in the Department. This work will include a thesis based on laboratory work, and Chemistry 8 and *f*, if not included in the undergraduate work.

Candidates for the advanced degree of *Engineer* in Chemical Engineering will be required to complete, in addition to the requirements for the A. B. degree specified under course D: Mechanical Engineering 14, 31, 24, 36, Chemistry 8, and a thesis based on laboratory work. Electrical Engineering 1 is advised, if possible, though not required. It is estimated that these requirements may be completed in one year after the completion of the requirements under Course D.

Candidates for the degree of *Doctor of Philosophy* in Chemistry, after the completion of the equivalent of the requirements for Master of Arts or Engineer, will follow such courses as are approved by the Department faculty, subject to general University regulations.

The Teacher's Recommendation.—The minimum requirement for the high school teacher's recommendation in Chemistry is courses 1 and *a* (Elementary and General Inorganic, lectures and laboratory), the first half of course 2 (Principles of Chemistry), and either the second half of course 2, or courses 6 and *b* (Qualitative Analysis, lectures and laboratory).

Laboratory Fees.—A charge of twenty-five dollars per semester will be made to students in each laboratory course of not more than four units registration. Of this charge five dollars per semester in assaying, and ten dollars per semester in the other courses, is returnable, less bills for breakage and loss of apparatus.

BOTANY

†Douglas Houghton Campbell, George James Peirce, Professors.
*Emilio Pepe Michael Meinecke, Acting Professor of Plant Pathology.
LeRoy Abrams, Associate Professor.
Leonas Lancelot Burlingame, Assistant Professor.
†James Ira William McMurphy, Instructor.
Frank Jason Smiley, Florence Williams (first semester), Assistants.

The Department of Botany aims to provide instruction for two classes of students: (*a*) Students who wish to know something of the structures, life proceses, and relationships of plants and to gain some familiarity with the methods of scientific work; and (*b*) Professional students who look forward to investigation, teaching, or the techincal applications of Botany in Plant Breeding, Forestry, Agriculture, Horticulture, etc. Course 1, which presents the elements of the more important divisions of botanical study, is designed to meet the needs of both groups of students and must precede all other courses in the department, except in the case of students who have received entrance credit for its equivalent. Courses 2 to 11 are open to students who have had course 1 or its equivalent. It is the aim of these courses to give the student by means of lectures and references to the literature a general and summary account of the present state of knowledge, and in the laboratory and the field to afford him an opportunity for a close personal acquaintance with the plants themselves. Students who have had two years' work, may, after consultation, be registered in courses 12, 13, or 14. The resources of the department afford exceptional opportunity for investigation in a number of fields. Properly qualified students desiring to undertake such investigation should register in courses 15, 16, or 17, after consultation with the instructor concerned.

Major students in the department will be expected to complete 34 units in the department, and Zoology 1. The thirty-four units should include courses 1, 2 or 4, 3, 6, 8 or 9. It is strongly recommended that courses 2 and 4 be taken in the second year.

The Teacher's Recommendation for High School Botany is based on a minimum of courses, 1, 2 or 4, 6, and 8 or 9.

Students looking to Forestry as a profession should include courses 3, 3*a*, and 11 as part of their preparation, and the following subjects

†Absent on leave, 1912-13.
*First semester, 1912-13.

in other departments: Elementary physics, chemistry, geology and physiography, zoology, entomology, economics, and applied mathematics. They should also be able to read French and German.

Fees are charged in the various courses approximately sufficient to cover the cost of the perishable materials and syllabus used, as follows: Course 1, $2.50; courses 2, 3, 4, 5, 6, 10, 11, 12, 13, $3.00 each; course 1*a*, $1.00; courses 8 and 9, $5.00 each.

1. Elementary Botany.—Study of representatives of the principal groups of plants, with lectures upon special morphology and classification. (Campbell's University Text-Book of Botany.)

Lec. W 1:30; Lab. MT or ThF 1:30 3 units, both semesters (Peirce, Burlingame, Abrams)

[Short botanical excursions will be made on five Saturday mornings in each semester. Attendance on these is not required, but is desirable, and will yield an additional half credit.]

1a. Field Botany.—Laboratory and field work in the collection and determination of flowering plants. Open to students who have had or are taking Course 1.

Saturday forenoons. 1 unit, last half 2d semester (Abrams)

2. Algae.—Lectures, reading, and laboratory work upon the special morphology and classification of the Algae. [Not given in 1912-13.] 5 units, 1st semester (Campbell)

3. Fungi.—The laboratory work (three hours) will be devoted to morphology, development, and culture methods; the lectures to systematic relationship, with an account of economically important forms [Not given in 1912-13.] 4 units, 1st semester (McMurphy)

3a. Forest Pathology.—Lectures, laboratory, and field work on the fungous and other plant diseases of forest trees.

Lec. Th 1:30; Lab. ThF 1:30-4:30 3 units, 1st semester. (Meinecke)

4. Archegoniatae.—Special morphology and classification of the Archegoniatæ. Continuation of course 2. [Not given in 1912-13.] 5 units, 2d semester (Campbell)

5. Gymnosperms.—Studies in the morphology, classification, and distribution of the group. Particular attention will be paid to the Conifers. [Not given in 1912-13.] 3 units, 2d semester (Burlingame)

6. Angiosperms.—Lectures and laboratory work on the morphology and classification of the Angiosperms. Open to students who have had course 1. 3 units, 2d semester (Abrams)

Lec. Th 1:30; Lab. ThF 1:30-4:30

7. The General Physiology of Plants.—Lectures. Open to all. [Not given in 1912-13.] 1 unit, 1st semester (PEIRCE)

8. Physiology.—Laboratory work, lectures, and reading on Nutrition. (An elementary knowledge of physics and chemistry is a desirable preliminary to this course.) 3 units, 1st semester
Lec. W 2:30; Lab. MT 1:30-4:30 (PEIRCE)

9. Physiology.—Laboratory work, lectures, and reading on Respiration, Growth, Irritability, and Reproduction. (An elementary knowledge of physics and chemistry is a desirable preliminary to this course.)
Lec. W 2:30; Lab. MT 1:30-4:30 3 units, 2d semester (PEIRCE)

10. Plant Anatomy and Botanical Technique.—Lectures and laboratory work on the anatomy of vascular plants with special reference to the adaptation of structure to function. Considerable attention will be devoted to the evidences of evolution afforded by vascular anatomy. The methods of killing, fixing, preserving, embedding, sectioning, staining, etc., will be taught in connection with the preparation of material for study in the course.
Forenoon hours, by arrangement 3 units, 1st semester (BURLINGAME)

11. Geographical Distribution and Forest Botany.—Lectures, laboratory, and field work on the trees and shrubs, and the principles of geographical distribution which they illustrate. Open to students who have had courses 1 and 1*a*. 3 units, 1st semester (ABRAMS)
Lec. W 2:30; Lab. MT 1:30-4:30

12. Cytology.—Lectures and laboratory work on the plant cell; the bearings of cytology on evolution, plant breeding, etc. (Open only to those who have had courses 1 and 10; courses 2 and 3 are desirable preliminaries). 3 units, 2d semester (BURLINGAME)
Lec. M 8:15; Lab. MTW forenoons

13. Archegoniatae.—Advanced work in special groups.
[Not given in 1912-13.] 1st and 2d semesters (CAMPBELL)

14. Taxonomy.—A critical study of some family or genus, with special reference to nomenclature and the methods of investigation. The laboratory and herbarium work will be supplemented by field work. By arrangement, either semester (ABRAMS)

15. Research in Morphology.— (BURLINGAME)

16. Research in Physiology.— (PEIRCE)

17. Research in Taxonomy and Geographical Distribution.— Western America with its great diversity of climate and topography affords innumerable problems for investigation in taxonomy and plant distribution. The university collections, officially known as the Dudley Herbarium, are rich in material from this region and offer favorable facilities for the pursuit of studies along these lines. (Abrams)

PHYSIOLOGY AND HISTOLOGY

Oliver Peebles Jenkins, Frank Mace McFarland, Professors.
Clara S. Stoltenberg, Associate Professor.
James Rollin Slonaker, Assistant Professor.
†Frank Walter Weymouth, Instructor.
Roscal Leroy Draper, Willard E. Kay, Jr., Howard Frank West, Assistants.

Undergraduate Courses

1. General Anatomy and Physiology.—This course is designed to give a general view of the laws of the structure and the activity of organisms. The work will give occasion to discuss many questions of General Biology. It consists of: First, the study of the cell and its activities as shown in the unicellular organisms, in reproductive cells, and in individual cells of many tissues; second, the study of the laws and course of development resulting in higher differentiations in structure, and specializations in function, exhibited in a selected series of organisms, both animals and plants, of increasing complexity; third, the comparative study of the physiological processes of forms placed under widely different conditions. The latter part of the course is occupied with an introduction to the embryology, anatomy, and physiology of vertebrates. (One lecture and five laboratory hours per week.)

Lec. M 1:30; Lab. MT 1:30-4:30 3 units, both semesters (Jenkins, Kay)

2. Physiology of Muscle, Blood, and Circulation.—To be preceded by courses 1 and 9 by majors in the Department. An experimental course covering the ground represented in Foster's Physiology, Part I, or Howell's Text-book on the same subjects. (One lecture and five laboratory hours per week.)

Lec. T 8:15; Lab. MT or ThF 1:30-4
3 units, 1st semester (Jenkins, Slonaker)

†Absent on leave, 1912-13.

3. Physiology of Digestion, Respiration, Elimination of Wastes, Metabolism, and Nutrition.—Planned to follow course 2. An experimental course, with Foster's Physiology, Part II, and Howell's Textbook, as texts. (One lecture and five laboratory hours per week.)

Lec. T 8:15; Lab. MT or ThF 1:30-4

3 units, 2d semester (JENKINS, SLONAKER)

4. Anatomy and Histology of the Sense Organs.— Dissection, and study of prepared slides. Texts: Böhm-Davidoff-Huber's Histology, Quain's Sense Organs, Stöhr's Histology. One lecture and six laboratory hours per week. Prerequisites for courses 4 and 5 are courses 1 and 9, for majors in the Department.

Lec. W 8:15; Lab. ThF 1:30-4:30, or MW 8:15-12:15

3 units, either semester (STOLTENBERG)

5. The Nervous System.—A study of the structure of the central nervous system of man by means of dissections and prepared slides, supplemented by dissections of other mammalian brains. Texts: Barker's Nervous System, Edinger's Nervöse Centralorgane, Johnston's Nervous System of Vertebrates, Quain's Neurology, Van Gehuchten's Système Nerveux. (One lecture and six laboratory hours per week.)

Lec. W 8:15; Lab. ThF 1:30-4:30, or MW 9:15-12:15

3 units, either semester (STOLTENBERG)

6. Physiology of the Nervous System and Sense Organs.—An experimental course in these subjects, requiring courses 4 and 5 as preliminary. (One lecture and five laboratory hours per week.)

Lec. M 10:15; Lab. ThF 1:30-4

3 units, 1st semester (JENKINS, KAY)

7. The Vertebrate Eye.—A comparative study of the structure and physiology of the eyes of vertebrates, giving special attention to the retina. Open to advanced students. (Lecture and laboratory work, six hours per week.)

By arrangement 2 units, 2d semester (SLONAKER)

8. Special Courses in Physiology.—Advanced courses open only to those who have had courses 1, 2, 3, 4, 5, and 6. They are arranged for the advanced study of selected subjects in physiology, or as a drill in the methods of research. The work will be planned for the individual student, the time varying with the exigencies of the case.

By arrangement 2 to 5 units, both semesters (JENKINS)

9. Histology.—The study of the structure of the cell and its modes of reproduction, the epithelial, muscular, nervous, and connective tissues, and the outline of their development in a comparative way occupy the first semester. During the second semester the structure of the

blood and lymph, and the microscopic anatomy of the organs are dealt with. Elementary histological technique is taught during the course. In the second semester an opportunity is offered for a limited number of students to register for an extra unit, which is devoted to more extended histological technique. Prerequisite for course 9, course 1, or its equivalent. (One lecture and six laboratory hours per week.)

Lec. Th 8:15; Lab. TTh 8:15-12:15

3 units, both semesters (McFarland)

10. Histogenesis.—A course in advanced Histology for students who have completed courses 1 and 9, and in addition the first semester of Vertebrate Embryology (Zoology 11). It comprises the comparative study of the histogenesis of the fundamental vertebrate tissues and organs. (One lecture per week, minimum laboratory work six hours per week.)

Lab. MTW 1:30-4:30 3 units, 1st semester (McFarland)

11. Neurocytology.—A comparative study of the minute structure of the nerve cell and nerve fibre, the neurone theory, and the question of functional alterations of structure during normal activity and artificial stimulation. (One lecture and at least six laboratory hours per week). Open to advanced students. [Not given in 1912-13.]

3 to 5 units, 2d semester, in alternate years (McFarland)

12. Cellular Biology.—A course in Cytology dealing with the structure and functions of the cell, with special reference to the reproductive processes in unicellular and multicellular organisms, and the theories connected therewith. Open to advanced students. (Two lectures per week, with demonstrations and laboratory work.)

MTW 1:30-4:30

3 to 5 units, 2d semester, in alternate years (McFarland)

13. Special Courses in Histology.—Advanced courses in Histology, Cytology, and Microscopic Anatomy will be arranged for individual students, with a view to giving drill in methods of research. Open only to those who have had courses 1, 4, and 9.

By arrangement 2 to 5 units, both semesters (McFarland)

14. Journal Club.—Students in the advanced classes will be expected to meet once a week to discuss current literature in Physiology and Histology.

By arrangement 1 unit, both semesters (Department Faculty)

15. Research in Physiology or Histology.—

By arrangement (Jenkins, McFarland, Slonaker, Stoltenberg)

Candidates for the Bachelor's degree who select Physiology and Histology as a major will be expected to take courses 1, 2, 3, 4, 5, 6, 9, and 14, and at least five units to be made up from the other courses offered in the Departments of Physiology, Anatomy, or Bacteriology; and in addition courses 1 and *a* in Chemistry, one year in Physics (see course 7), and the first semester in Embryology (course 11 in Zoology). Candidates for the degree of M. D. will also include Organic Chemistry and courses in German or French sufficient to give a reading knowledge of the language.

Laboratory Unit of Credit.—In those courses in which definite laboratory time is not fixed, three hours of laboratory work per week through one semester are taken as the equivalent of one unit of credit.

The Teacher's Recommendation.—Students who wish the Department recommendation for High School teaching in Physiology are expected to complete courses 1, 2, 3, and 9.

Laboratory Fees.—Five dollars per semester for each laboratory course.

Graduate Courses

The graduate work of the Department is included in the courses 7, 8, 10, 11, 12, 13, 14, and 15. Undergraduate students may elect such of these courses as they are prepared to take, but credit recorded in undergraduate standing will not count toward a higher degree. The details of the work of a graduate student will be planned for each individual, and will naturally depend on the aim sought by him and upon his previous training. Candidates for the higher degrees will be expected to include in their work, attendance on the Journal Club and Seminary, the selection of certain of the courses given above, and the accomplishment of some research. When it is desired to select a minor subject, the choice of such minor will be guided by the needs of the candidate. The work leading to these degrees is of such a nature as to require a reading knowledge of German and French for its accomplishment.

Preparation for the Study of Medicine

Students intending to enter on the study of Medicine are advised to take Physiology and Histology as a major subject, with Chemistry, Physics, and Anatomy among the collateral subjects. Such a curriculum gives that foundation both in scientific knowledge and in skill in experimental Physiology, and in Histological and Anatomical technique, which will make it possible to accomplish the medical course of the best medical schools with the greatest advantage. The courses required for graduation in the Department of Physiology and Histology with the

degree of A. B. include the premedical requirements and the work of the first year of the Medical Department of this University. For details of requirements for students intending to register in the Department of Medicine see the announcement of that department.

PHYSICAL TRAINING AND PERSONAL HYGIENE

ENCINA GYMNASIUM

ROYCE REED LONG, Assistant Professor, and Director of Physical Training.

HARRY WILFRED MALONEY, Assistant.

JOHN FRYE CHAPMAN, JAMES PORTER CRAWFORD, FRANK HOWARD HILTON, GEORGE STEVENSON HOLEMAN, ERNESTO RAY KNOLLIN, ARCHER BELL STUART, CLYDE T. WETMORE, CHARLES HYDE WOLLASTON, HARRY ALPHONSO WYCKOFF, Gymnasium Assistants.

The gymnasium is the laboratory of personal hygiene. Its function is (1) to promote standards of health and to improve physical and mental efficiency; and (2) to prepare teachers and supervisors of physical training for the schools and public playgrounds. Students desiring to prepare as teachers of physical training should consult with the Director concerning their curriculum.

1. Physical Training.—Three exercise hours per week in the gymnasium or its outdoor athletic sections. Registration may be repeated, but each student must make progress toward his highest physical efficiency. A regulation gymnasium uniform is required.

MWF 10:15, 11:15, 4, 5; TThS 11:15

1 unit, each semester (LONG, MALONEY, and Assistants)

2. Physical Training Methods.—Open to students who desire to prepare as supervisors of physical training in the public schools or on public playgrounds. The work outlined below is planned to cover three years of time. In addition to this students should acquire a foundation in physiology, education, sociology, and anatomy in those departments.

(*a*) Technique of gymnastics, athletic sports, gymnasium and playground games.

(*b*) Personal hygiene and first aid.

(*c*) Physical examinations and prescription of exercise.

(*d*) Gymnasium and playground equipment and supervision.

(*e*) A survey of the literature on physical training.

(*f*) Practice teaching.
Three or six hours per week.
By arrangement 1 or 2 units, each semester (Long)

3. Public Health.—Two lectures per week on public and occupational hygiene. Stereopticon slides and other illustrative material will be used. Trips to the federal quarantine station and city health departments in the vicinity of San Francisco Bay will be required.
TTh 8:15 1 unit, 1st semester (Long)

4. Individual Hygiene.—One lecture per week with assigned reading and report on the care of the body. Exercise, rest, diet, respiration, bathing, and home sanitation will be discussed.
T 8:15 1 unit, 2d semester (Long)

ROBLE GYMNASIUM

Clelia Duel Mosher, Assistant Professor and Director.
Maude Cleveland, Instructor in Physical Training.
Harry Wilfred Maloney, Assistant in Fencing.
Catharine Morris Cox, Etta L. Paris, Assistants.

The aims of Roble Gymnasium, which is the laboratory of personal hygiene, are (1) to improve the standard of physical health of the women and to increase their mental and physical efficiency; (2) to give some of the preliminary work to students who are preparing to teach physical training and direct playground work.

1. Physical Training and Personal Hygiene.—Three hours per week in the gymnasium or its open air divisions. Open to all women students. Registration may be repeated each semester, but each student must show steady progress toward her highest physical efficiency. The Stanford regulation gymnasium suit is required. All work is under the close supervision of the Medical Director.

First Year.—Gymnastics, Folk and Gymnastic Dancing.

Second, Third, and Fourth Years.—Gymnastics, Folk and Gymnastic Dancing, Sports or Fencing. 1 unit, each semester
(Mosher, Maloney, Cleveland, Paris, Cox)

(1st year Gymnastics) MWF 11:15; (1st year Gymnastic and Folk Dancing) TThF 11:15; (2d, 3d, and 4th year Sports) MTWThF 4:30; (Gymnastics) MWF 4:30; (Gymnastic and Folk Dancing) TThF 4:30; (Elementary Fencing) MWF 11:15; (Advanced Fencing) TThF 10:15

2. Personal Hygiene.—Two lectures per week. Open to all women students. Required of all women taking Physical Training Methods.
TTh 10:15 2 units, 2d semester (Mosher)

3. Physical Training Methods.—

a. Theory

MWF 10:15 — 2 units, 1st semester

b. Practice Teaching.—2 hours per week, with preparation.

TTh 9:15 — 1 unit, 1st semester

c. Play Ground Administration and Equipment.—Lecture or recitation, with reference readings and papers.

T 8:15 — 1 hour, either semester

d. Supervision of Children's Play.—4 hours per week.

2 units, either semester (Mosher, Cleveland, Paris, Cox)

Students preparing to teach Physical Training or to supervise playground work should take the courses listed below in addition to the courses offered in this department. Such students are advised to major in Zoology; if other majors are desired students are requested to consult the Director.

In the Department of Zoology:

1. Elementary Zoology. — 3 units, both semesters

7. Microscopical Anatomy. — 2 units, first semester

In the Department of Physiology:

2. Physiology of Muscle, Blood, and Circulation. — 3 units, 1st semester

3. Physiology of Digestion, Respiration, Elimination of Wastes, Metabolism and Nutrition. — 3 units, 2d semester

In the Department of Human Anatomy:

1. Osteology. — 2 or 3 units, 1st semester

2, 3, 4. Dissections of (2) Head, Neck, Thorax, (3) the Upper Extremity, (4) Lower Extremity and Abdomen. — 2 to 5 units or more

7. Topographical Anatomy.

In the Department of Psychology:

1. Elementary Psychology. — 4 units, 1st semester

1*a*. Mental Hygiene. — 2 units, 1st semester

(Either course 1 or course 1*a*.)

In the Department of Botany:

1*a*. Field Botany. — 1 unit, 2d semester

In the Department of Entomology:

8. Insects and Disease. — 1 or 2 units, 1st semester

In the Department of English:

1*a*. Vocal Expression. — 1 unit, either semester

In the Department of Economics:

1. Elements of Economics. 3 units, both semesters

In Department of Mechanical Engineering:

5. Shopwork—Woodworking. 2 exercises a week, one semester

ZOOLOGY

CHARLES HENRY GILBERT, HAROLD HEATH, GEORGE CLINTON PRICE, Professors.

JOHN OTTERBEIN SNYDER, Associate Professor.

EDWIN CHAPIN STARKS, WALTER KENRICK FISHER, Assistant Professors.

Courses 1, 2, and 3 may be undertaken without previous preparation in Zoology.

1. Elementary Zoology.—A laboratory course involving the study of representatives of the principal groups of animals, accompanied by lectures on their structure and classification, and on the general laws of biology which they illustrate. The course may be begun the second semester by students matriculating at that time.

Lec. M 1:30; Lab. MT 1:30-4:30 3 units, both semesters (PRICE, STARKS)

2. Elementary Zoology (special).—A laboratory course for beginners designed to meet the needs of major students in Geology. A considerable number of forms in each of the principal groups will be studied, and attention will be given to the conditions under which animals live. Field trips will constitute a required part of the course.

ThF 1:30-4:30 2 units, both semesters (FISHER)

3. The Vertebrates.—A general course in the classification of vertebrate animals, with studies in their habits and the geographical distribution of species. The course will include field excursions and a study of the methods of collecting and preserving specimens. The course may be begun either semester. 2 units, both semesters

Lec. M 2:30; Lab. MT 1:30-4:30 (SNYDER)

4. The Invertebrates.—This course, following course 1 or 2, is designed to give the student a broader knowledge of the morphology and relationships of the more important invertebrate groups.

Lec. by arrangement; Lab. MT 1:30-4:30

3 units, both semesters (HEATH)

5. Invertebrate Embryology.—A study of segmentation, the formation of the germ layers, and certain phases of the later development,

including the significance of larval forms and the relationships of the principal phyla. Must be preceded by courses 1 or 2, and 4.

Lab. ThF 1:30-4:30

2 units, both semesters (beginning 2d semester) (HEATH)

6. Advanced Work on Invertebrates.—The original investigation of problems connected with the anatomy and embryology of invertebrates.

By arrangement 3 to 5 units, both semesters (HEATH)

7. Microscopical Anatomy.—A study of the fundamental animal tissues, with drill in microscopical technique.

Lab. ThF 1:30-4:30 2 units, 1st semester (HEATH)

8. Classification of the Invertebrates.—A course designed to give a wider acquaintance with the larger groups of marine invertebrates. Must be preceded by either course 1 or 2.

Lab. MTW 1:30-4:30 3 units, both semesters (FISHER)

9. Special Systematic Work on Invertebrates.—Original investigation of problems connected with the classification of invertebrates.

By arrangement 2 or 3 units, both semesters (FISHER)

10. Comparative Anatomy of the Vertebrates.—A detailed examination of vertebrate morphology, including dissection of representatives of the several classes of vertebrates, with comparative studies in vertebrate osteology, the nervous and circulatory systems, etc.

Lab. WThF 1:30-4:30 3 units, both semesters (SNYDER)

11. Vertebrate Embryology.—First semester: development of the chick through the first three days of incubation. Second semester: the early stages in the development of the salamander and the later stages in the development of the mammal. 2 units, both semesters

Lec. Th 1:30; Lab. ThF 1:30-4:30 (PRICE)

12. Ichthyology.—A course of lectures and laboratory work, including an examination of the larger groups of fishes with special reference to the characters on which they are based, and including practical work in the discrimination of species.

WThF 1:30-4:30 2 units, both semesters (GILBERT, STARKS)

13. Advanced Ichthyology.—Special problems in the morphology and classification of fishes will be set for advanced students prepared for such work.

By arrangement 2 to 5 units, both semesters (GILBERT)

14. Journal Club.—Open to seniors and graduate students.

2 units, both semesters (GILBERT)

Major students must before graduation complete courses 1, 4, 7, 10, 12, 14, the first semester of courses 5 and 11, one advanced course in Zoology, and course 1 in Botany.

Work for graduate and special students will be laid out in accordance with their individual needs and preferences.

Students who look forward to the study of medicine may take Zoology for their major subject and receive the B. A. degree at the close of a four years' course which shall also contain the first year in medicine. The following courses in Zoology will be required of such students: Zoology 1, 6 units; Invertebrate Zoology, 6 units; Comparative Anatomy, 6 units; Embryology, 4 units; Journal Club, 4 units.

The Teacher's Recommendation.—The Department recommendation for High School teaching in Zoology requires the completion of the following subjects: Elementary Zoology, 6 units; the Invertebrates, 6 units; the Vertebrates, 4 units; Comparative Anatomy of the Vertebrates, 6 units.

The Zoological Collections

The Zoological Museum contains a very full representation of the fishes of North America, and includes among others a valuable series of the deep-water fishes of the Pacific, and large collections from the West Indies, the Hawaiian Islands, Bering Sea, Japan, the coasts of Mexico and Central America, and the Galapagos Islands. The museum contains also a large representation of the reptiles, batrachians, birds, and mammals of California and adjoining States. The collection of marine invertebrates is rich in Pacific echinoderms and crustacea, and contains a good working nucleus in the other principal groups. The series of deep-sea forms is especially valuable.

Laboratory Fees.—All laboratory courses, three dollars each per semester.

ENTOMOLOGY AND BIONOMICS

Vernon Lyman Kellogg, Professor.

Mary Isabel McCracken, Rennie Wilbur Doane, Assistant Professors.

David Starr Jordan, Lecturer.

ENTOMOLOGY

1. Elementary Entomology.—The elementary study of insect structure, development, and classification, including practice in collect-

ing and preserving specimens. A preparatory study of the subject of entomology. 3 units, either semester

MWF any forenoon hours (McCracken)

2. Morphology and Physiology of Insects.—A study of the metamorphosis, comparative morphology, and special physiology of insects, with a comprehensive study of the honey-bee.

MWF any forenoon hours 3 units, either semester (McCracken)

3. Natural History and Classification of Insects.—A comprehensive study of the natural history and classification of insects, and the literature of entomology. Field and laboratory work.

Forenoon hours 4 units, either semester (McCracken)

4. Economic Entomology: Coccidae (the Scale Insects).—A study of the classification, general biology, and economic relations of the scale insects, with particular attention to the more important injurious ones of the Pacific Coast. Field, laboratory, and bibliographic work, with occasional lectures. Must be preceded by courses 1, and 2 or 3.

Any three afternoons, 1:30-4:30 2 or 3 units, either semester (Doane)

5. Economic Entomology: Forest Insects.—A study of the insect enemies of forest and shade trees. The course includes field, laboratory, and bibliographic work. Should be preceded by course 4.

MWF 1:30-4:30 3 units, 1st semester (Doane)

6. Economic Entomology: Orchard and Garden Insects.—A study of the principal injurious and beneficial insects of the orchard and garden. Includes field, laboratory, and bibliographic work, and a weekly lecture on the history, principles, and practice of economic entomology. Should be preceded by course 4.

MWF 1:30-4:30 3 units, 2d semester (Doane)

7. Economic Entomology: Advanced Work.—Studies of one or more groups of insects of economic importance, including systematic biological and sociological investigations, and methods of controlling the injurious species. Field, laboratory, and library work, with occasional lectures. Intended for students fitting themselves for practical work in Economic Entomology. Open to advanced students by arrangement. 3 to 5 units, both semesters (Doane)

8. Insects and Disease.—A discussion of the insects that cause or disseminate some of the diseases in man and the domestic animals. Lectures and demonstrations. Open to students having some previous training in biology. 1 or 2 units, 1st semester

Lec. TTh 9:15; Lab. forenoon hours (Doane)

9. General Entomology and Insect Adaptations.—A course of lectures and demonstrations. Open to students who have had some work in Biology (Zoology, Botany, or Physiology).

Lec. TTh 9:15 2 units, 2d semester (KELLOGG)

10. Advanced Work.—Advanced study and investigation of the biology of insects. Laboratory and field work.

Any forenoon hours 2 to 5 units, both semesters (KELLOGG, MCCRACKEN)

BIONOMICS

11. Organic Evolution.—Lectures on the laws or principles of biology and the factors in organic evolution. Not open to first- and second-year students. 3 units, 1st semester

MWF 10:15 (JORDAN, KELLOGG, MCCRACKEN)

12. Man in Nature and Evolution.—Open to students who have had course 11 or considerable work in Biology. Admission to course only by arrangement. [Not given in 1912-13.]

2 units, 1st semester (KELLOGG)

Work for graduate and special students will be specially arranged.

Major students in Entomology must obtain before graduation twenty-four units of credit in Entomology, and credit for course 1 in Zoology, and course 1 in Botany, making thirty-six units in biological subjects.

The ENTOMOLOGICAL COLLECTIONS contain authoritatively determined specimens, accessible for comparison, in all of the insect orders, and include many sets of specimens illustrating the development and habits of insects. There is included, also, the most important existing collection of North American Mallophaga, comprising the types of four-fifths of all the species so far described from North America and the Pacific Islands, an unusually large collection of Coccidæ (scale insects), and a valuable series of specimens from the Galapagos Islands.

Laboratory Fees.—Three dollars per semester for each laboratory course.

GEOLOGY AND MINING

GEOLOGY

JOHN CASPER BRANNER, JAMES PERRIN SMITH, Professors.

AUSTIN FLINT ROGERS, CYRUS FISHER TOLMAN, JR., Associate Professors.

WARREN GOSSELIN COOPER, Assistant in Mineralogy.

CARL HUGH BEAL (first semester), OLAF PITT JENKINS (second semester), Curator in Geology.

Students intending to make Geology their major subject should offer, as a part of their entrance preparation, solid geometry, trigonometry, physics, chemistry, zoology, and French or German, or both; otherwise the mathematics, physics, chemistry, and language must be taken in the University.

1. Dynamic and Structural Geology.—Lectures, with syllabus.
MWF 8:15 3 units, 1st semester (BRANNER)

1a. Physiography.—Lectures, with syllabus. Open to students who have completed course 1.
W 8:15 1 unit, 2d semester (BRANNER)

1b. Field Excursions.—Open to Geology and Mining Majors only.
Saturday forenoons 2 units, 1st semester (TOLMAN)

2. Economic Geology.—Lectures, with syllabus. Open to students who have completed course 1.
TTh 8:15 2 units, 2d semester (BRANNER, TOLMAN)

3. Topographic Geology.—Field and laboratory work, with the construction of geologic maps and sections. Open to students who have completed course 1 in Geology and course 4*a* in Civil Engineering.
4 units, summer vacation (BRANNER, TOLMAN)

4. Field Geology.—Field practice in working out geology in the field and its representation upon topographic maps and sections. Prerequisites: Geology 1 and 1*b*, and Civil Engineering 4*a*.
5 units, summer vacation (BRANNER, TOLMAN)

5. Mineralogy.—(*a*) Methods of study and the determination of minerals, including Crystallography and Blowpipe Analysis (first semester); (*b*) Study of common and important minerals (second semester). (Rogers' Introduction to the Study of Minerals). Open to students who have taken or are taking qualitative analysis.
(1st sem.) Lec. WF 11:15; Lab. 1:30-4:30; (2d sem.) Lec. ThF 11:15; Lab. 1:30-4:30 3 units, both semesters (ROGERS, COOPER)

6. Petrography.—(*a*) Crystal optics and study of rock-forming minerals in thin sections and hand specimens (first semester); (*b*) Study of principal rock types, igneous, sedimentary, and metamorphic (second semester). Open to students who have completed course 5 or equivalent. 2 units, both semesters (ROGERS)
(1st sem.) Lec. T 11:15; Lab. 1:30-4:30. (2d sem.) Lec. W 11:15; Lab. 1:30-4:30

7. Paleontology.—(*a*) Systematic Paleontology, or the history and character of organisms (first semester); (*b*) Historical Geology, or

the history and character of geologic formations (second semester). Open to students who have completed course 1.

MTTh 11:15 4 units, both semesters (SMITH)

8. Paleontology.—Original investigation of various problems in paleontology, especially of invertebrate morphology, and of the distribution of faunas. This course will consist entirely of private work, in field and laboratory. Open to advanced students and graduates.

By arrangement 2 to 5 units, both semesters (SMITH)

9. Advanced Mineralogy.—Properly qualified advanced and graduate students may take up one or more of the following lines of study:

a. Paragenesis of Minerals. The occurrence, association, and origin of minerals. Mineralogy and petrography are prerequisites.

By arrangement 3 units, 1st semester (ROGERS)

b. Chemical Mineralogy. Mineral or rock analysis, including preparation of material and study of some physical properties. Chemistry *e* is a prerequisite. 2 to 4 units, either semester (ROGERS)

c. Crystallography. In the second semester an advanced course will be given in either crystal measurement or in crystal optics.

2 or 3 units, 2d semester (ROGERS)

10. Paleontology.—Lectures on special topics. Open to advanced students and graduates.

TTh 10:15 2 units, both semesters (SMITH)

11. Special Courses.—Special courses of instruction and training are laid out for advanced and special students according to the needs and qualifications of each individual. Special investigations are taken up by advanced students as rapidly as it is possible for them to undertake such work advantageously.

1 to 5 units, both semesters (BRANNER, TOLMAN)

11a. Ore Deposits: Advanced course. Prerequisites, Geology 1, 2, and 9*a*. 3 units, 2d semester (TOLMAN)

Fees.—Course 1, $3; course 2, $3; course 3, $15; course 4, $20; course 5, $5 each semester.

MINING AND METALLURGY

DAVID MORRILL FOLSOM, GALEN HOWELL CLEVENGER, Associate Professors.

HAYES WILSON YOUNG, HENRY TRUMAN BECKWITH, Instructors.

Students intending to make Mining and Metallurgy their major subject should offer as a part of their entrance preparation, solid geometry, trigonometry, advanced algebra, physics, chemistry, zoology, and

Spanish, French, or German; otherwise the mathematics, physics, chemistry, and one language must be taken in the University.

The Department offers to students a five-year curriculum leading to the degree of Mining Engineer or Metallurgical Engineer.

The degree of Bachelor of Arts will be granted upon the satisfactory completion of four years of this curriculum.

Mining

The following is a general summary of the curriculum in Mining, which will be subject to adjustment in individual cases:

First Year.—Applied Mathematics 1 (10 units); Engineering 1*a*, 1*b* (6 units); Chemistry 1, *a* (6 units); English A, 2 (3 units); Language—French, German, or Spanish (6 units). Total, 31 units.

[None of the first-year subjects offered in the second semester can be taken without the first semester's work. First-year students can therefore advantageously enter the course as outlined above only at the beginning of the first semester.]

Second Year.—Applied Mathematics 2, 3 (16 units); Mechanical Engineering 11 (2 units); Chemistry 6, *b*, *d* (8 units); Geology 5 (6 units); English 2*b* (2 units). Total, 34 units.

Third Year.—Engineering 2, 3*a* (8 units); Civil Engineering 4*a* (5 units); Chemistry *h* (3 units); Mechanical Engineering, 1*a*, 1*b* (3 units); Geology 1, 2, 6 (9 units); Mining 8 (4 units). Total, 32 units.

Fourth Year.—Mechanical Engineering 24, 31 (6 units); Geology 3, 4, 7*b* (13 units); Mining 1, 2, 4, 9, 10, *a* (16 units); Electrical Engineering 1 (4 units). Total, 39 units.

Geology 3 and 4 (9 units) are given during the summer vacation, between the third and fourth years.

In the fourth year Mining *b* (3 units), or Civil Engineering 8*c* (3 units) may be substituted for Mechanical Engineering 24.

Fifth Year.—For the degree of Mining Engineer the following curriculum is suggested: Mechanical Engineering 35, 36 (6 units); Civil Engineering 8 *b* (3 units); Geology 9*a*, 11*a* (6 units); Mining 3, 5, 6, 7, *b* (21 units). Total, 36 units.

1. General Lectures on Mining.—Including methods of earth and rock excavation, prospecting, tunneling, shaft sinking, and mining methods. Open to students who have completed Geology 1 and 2.

MTWThF 10:15 5 units, 1st semester (Folsom, Beckwith)

2. Ore Dressing.—Lectures on crushing and concentrating machinery and methods.

TTh 9:15 2 units, 2d semester (Clevenger, Folsom)

3. Summer Mining.—Two months' systematic work in the mines. Between fourth and fifth years. 4 units

4. Lectures on Mine Plant.—Including hoisting machinery, compressors, mine pumps, ventilating fans, and the handling of ore underground and on the surface.

MWF 8:15 3 units, 2d semester (FOLSOM)

***5. Ore Dressing.**—Continuation of course 2. Theories of concentration and comparison of milling practice in different parts of the United States.

By arrangement 2 units, 1st semester (FOLSOM)

***6. Mine Engineering.**—Lectures and assigned reading on general engineering problems in connection with mining operations, including administration, organization, mine examinations, accounting, surveying, etc.

By arrangement 2 units, 2d semester (FOLSOM)

7. Mine Thesis.—Each student describes and estimates the cost of the development and equipment of an hypothetical mining property under conditions which are assigned so as to fit the experience he has gained in his summer work.

5 units, both semesters (FOLSOM, BECKWITH)

METALLURGY

Students working for the degree of Metallurgical Engineer will be required to take the same work for the first three years as the Mining Engineers.

In the fourth and fifth years the following courses must be substituted for engineering courses: Chemistry 2, 8, *e* (16 units).

A thesis on a metallurgical subject and advanced laboratory work will also be required in the fifth year.

The following four-year curriculum is offered for the degree of Bachelor of Arts:

FIRST YEAR.—Applied Mathematics 1 (10 units); Engineering 1*a*, 1*b* (2 units); Mechanical Engineering 11 (3 units); Chemistry 1, *a* (6 units); English A, 2 (3 units); Language—French, German or Spanish (6 units). Total, 30 units.

SECOND YEAR.—Chemistry 2, 6, *b*, *d* (14 units); Geology 5 (6 units); Civil Engineering 4*a* (5 units); English 2 (2 units); Optional (3 units). Total, 30 units.

* For fifth-year students only.

THIRD YEAR.—Chemistry 10, *e, h* (9 units); Geology 1, 2, 6 (9 units); Mining 2 (2 units); Mechanical Engineering 1*a*, 1*b*, 24, 31 (9 units); Optional (3 units). Total, 30 units.

FOURTH YEAR.—Electrical Engineering 1 (4 units); Mining 1, 4, 8, 9, 10, *a, b, d* (24 units). A short thesis will also be required for graduation, making a total for the year of 30 units.

The courses in Metallurgy are not open to first-year students.

IGNEOUS METALLURGY

8. General Metallurgy.—Lectures upon the principles of metallurgy, fundamental chemical reactions, fuel, heat, refractory materials, etc. *Metallurgy of Copper and Lead.*—Lectures upon processes of lead and copper smelting, electrolytic copper refining, refining of base bullion, parting and electrolytic refining of Doré bullion. This course also deals with the metallurgy of gold and silver in so far as their metallurgy is inseparable from that of copper and lead. Open to students who have completed Chemistry 1, and prerequisite of all laboratory courses in Metallurgy.

TWThF 10:15 4 units, 2d semester (CLEVENGER, YOUNG)

9. Metallurgy of Constructive Materials.—Lectures upon the manufacture and properties of iron and steel, and to a less extent the other alloys used in engineering. Bearing metals, bronzes, brasses, etc. Laboratory work in this course is given in connection with Engineering 2*b* (Mechanics of Materials). Open to students who have completed Chemistry 1.

WF 11:15 2 units, 1st semester (CLEVENGER)

HYDRO METALLURGY

10. Metallurgy of Gold and Silver.—Lectures upon the Cyanide process of gold and silver extraction. The older and now almost obsolete processes of chlorination, hyposulphite lixiviation, patio, and pan amalgamation, etc., are dealt with very briefly. Open to students who have completed Chemistry 1 and *a*, and prerequisite of laboratory course *b*.

TTh 9:15 2 units, 1st semester (CLEVENGER)

LABORATORY COURSES

a. General Metallurgy Laboratory.—A course of carefully selected experiments which illustrate the lectures in Metallurgy 8. Open to students who have completed Chemistry *h*, and course 8; in special cases may be taken at the same time as Metallurgy 8.

ThF 1:30 2 units, 2d semester (YOUNG)

b. Metallurgy of Gold and Silver Laboratory.—This course involves the laboratory examination and report upon the possible treatment of gold and silver ore by the cyanide process. Open to students who have completed Chemistry *d* and *h*, and Metallurgy 10.

MTWThF 1:30 3 to 5 units, either semester (YOUNG)

c. Metallography.—Conferences, reading, and laboratory work. Includes the study of micro-structure and cooling curves. Open to students who have completed Chemistry 10 and *i*, Mineralogy 5*a* and 5*b*, Petrography 6*a* and 6*b* 3 to 5 units, either semester

1:30, by arrangement (CLEVENGER)

d. Metallurgical Research.—Properly qualified students may take up any subject of metallurgical investigation in laboratory, and under proper restrictions, certain investigations may be carried on in the field, also work in bibliography. Any number of units, either semester.

1:30, by arrangement (CLEVENGER)

Fees.—Courses 1, 8, 9, and 10, $5 each; course 4, $3; courses *a* and *b*, $10 per unit each; course *c*, $5 per unit; course *d*, according to amount of work done.

ENGINEERING

A. ENTRANCE SUBJECTS

Students must present among their entrance subjects solid geometry and trigonometry, in order to take the first year's work in applied mathematics for engineers. Those who fail to do this will not be able to graduate in less than five years.

B. GENERAL COURSES

I. APPLIED MATHEMATICS

First-year Courses:—Algebra; Trigonometry; Co-ordinate Geometry.

Second-year Courses:—Calculus; Theoretical Mechanics.

(See announcement of Department of Applied Mathematics, p. 127.)

II. GENERAL TECHNICAL COURSES

1a. Linear Drawing and Lettering.—(Drafting two afternoons a week, first half of the semester.) Open to all students, and required of those whose major subject is in any of the engineering departments, whether or not they have received entrance credit in mechanical drawing. This requirement is waived, however, for a student who satisfies the instructor that he has had the equivalent of this course, by submitting work in linear drawing and freehand lettering, or by passing

a special examination. The instruments and materials for this course cost from twenty to thirty dollars. 1 unit, either semester
MT or ThF 1:30-4:30 (Halcombe, Brown)

1b. Descriptive Geometry.—Including applications to shades, shadows, and perspective. (Two afternoons of drafting each week, November and December. Two lectures and two afternoons of drafting each week, January to May.) This course is open to students who have completed or who are taking Solid Geometry and Engineering 1*a*, and is required of students whose major subject is in any of the engineering departments.
Lec. TTh 8:15, 10:15; Dft. MT or ThF 1:30-4:30
1 unit, 1st semester; 4 units, 2d semester (————)

2. Applied Mechanics:—

a. Mechanics of Materials.—A study of the theory of the strength and elastic properties of the ordinary materials of engineering construction. The main subjects covered are simple tension, compression, and shear; theory of flexure, with application to simple, continuous, and non-homogeneous beams; theory of long columns; torsion; repeated stress; sudden stress and resilience. (Lectures and recitations three hours a week.)

b. Testing of Materials.—Each student is required to make a series of experiments, testing the strength and elastic properties of wrought iron, cast iron, steel, and wood. A careful record of all experiments is required of every student. (Laboratory work, six hours a week.)

Open to students who have completed the first- and second-year courses for Engineering students in Applied Mathematics; required of all students having Engineering as a major subject.
Lec. MWF 9:15; Lab. MWF 10:15-12:15, or MT or ThF 1:30-4:30
5 units, 1st semester (Wing, Moser)

3. Hydraulics:—

a. Hydrostatics and Hydraulics.—This course treats of fluid pressure, the principles of fluid equilibrium, and the laws governing the flow of water through orifices, over weirs, in closed conduits, and in open channels. Open to students who have completed courses 2 and 3 in Applied Mathematics. 3 units, 2d semester (Hoskins)
MWF 9:15

b. Hydraulic Motors.—A discussion of the theory of the main types of turbines, including centrifugal pumps. A few lectures on the general theory of energy and on relative motion are given as an introduction to the course. Open to students who have completed course 3*a*.
MWF 9:15 3 units, 1st semester (Hoskins)

I. CIVIL ENGINEERING

CHARLES DAVID MARX, CHARLES BENJAMIN WING, LEANDER MILLER HOSKINS, JOHN CHARLES LOUNSBURY FISH, Professors.
JOHN HARRISON FOSS, Assistant Professor.
CHARLES MOSER, Instructor.

A. TOPOGRAPHIC ENGINEERING

4a. Elementary Surveying.—Lectures: systems of co-ordinates, measurements, choice of systems, errors, checks, surveys. Field work: experimental exercises, surveys. Drafting-room: computing, mapping. (Lectures two hours, field work and drafting nine hours, each week.) Open to students who have completed Engineering 1*a* and Applied Mathematics 1. Required of students in Civil and Mining Engineering.

Lec. TTh 9:15; Dft. M 1:30-4:30; Field S 9-4:30

5 units, either semester (FISH)

4b. Elementary Surveying.—For students in Mechanical and Electrical Engineering. (Field work, reading, and drafting, six hours each week.) 2 units, 1st semester (THOMAS, MCCREADY)

Dft. and Field S 9-4:30

B. RAILROAD ENGINEERING

6a. Railroad Surveying.—Lectures: circular curves, spirals and turnouts; reconnaissance, preliminary, location, and construction surveys; earthwork. Field and office: exercises in laying out curves and taking cross-sections for topography and earthwork, and in plotting them; preliminary survey with profile and topographic map; paper location with profile and quantities; staking out paper location; earthwork and drainage surveys; final location profile and map; earthwork computations; distribution of material with use of mass diagram; overhaul computation; estimate of cost. (Recitations two hours, drafting and field work nine hours, each week.) Open to students who have completed 4*a*. Required of students in Civil Engineering.

Lec. TTh 9:15; Dft. M 1:30-4:30; Field S 9-4:30

5 units, 2d semester (FISH)

6b. Railroad Location.—Locomotive tractive force and resistances thereto, velocity profile, momentum grade. Traction problems involving inter-relation of train weight, grade, speed, and characteristics of locomotive. Tonnage rating. Value of change in distance, curvature, rise and fall, and ruling grade, based on analysis of operating expenses. Pusher grades, balance grades for unequal traffic and for adjacent divisions. Open to students who have completed 6*d*.

Lec. TTh 11:15 2 units, 1st semester (FISH)

6c. Railroad Construction.—Lectures: methods of construction; choice of construction plant; collection and record of information upon which general plans and detail designs are based; general planning and detail designing; staking out; inspection; classification; monthly estimates; records, reports, and accounts; checks and controls. Assigned problems: economic distribution of material along the profile; comparison of trestle and fill with opening; economic division point for open cut and tunnel. Open to students who have completed 6*d*. (Lectures two hours, assigned reading, computing, and drafting, one, four, or seven hours, each week.)

Lec. and Dft. TTh 11:15 1 to 3 units, 2d semester (Fish)

6d. Engineering Economy.—Interests, sinking funds, index of economy, elements of cost of service, estimating and reliability of estimates, selection of the economical structure; economic life; depreciation. Open to students who have completed 6*a*. (Lectures, recitations, assigned reading, and problems, six hours per week.)

Lec. TTh 8:15 2 units, 1st semester (Fish)

C. Structural Engineering

8a Elements of Design:—

1. *Materials.*—[See course 10 in Mining and Metallurgy.]

2. *Mechanics of Structures.*—Course 3 in Applied Mathematics is extended to the analytical and graphical determination of stresses in simple trusses. (Drafting-room, nine hours a week first half of semester.)

3. *Theory of Structural Details.*—Section 2 above is extended to an investigation of the distribution of stresses in structural details (Drafting nine hours a week, last half of semester.)

Open to students who have completed course 1 in Engineering, and who have taken or are taking course 2 in Engineering, and also course 11*c* in Geology and Mining. Required of all students having Civil Engineering as a major subject

Dft. WThF 1:30-4:30 3 units, 1st semester (Foss)

8b. Elements of Design:—

1. *Materials.*—Structural materials, other than metals, are studied from an engineering standpoint. Wood, stone, brick, limes, cement, etc., are considered in order. (Lectures three hours a week first half of semester.)

2. *Foundations.*—Under this head are considered the bearing power of soils, strength of piles, distribution of pressures, and similar details

connected with the design of simple foundations. (Lectures and assigned reading three hours a week last half of semester.)

3. *Design.*—Complete designs are made, including working drawings, bill of materials, and estimate of cost, of some simple structure, such as a mill building or highway structure. (Drafting-room, nine hours a week first half of semester; six hours a week last half of semester.)

4. *Testing.*—Extending the work of course 2*b*. Each student is required to make a series of experiments, testing the physical properties of cement and other masonry materials. (Laboratory, last half of semester.)

Open to students who have completed course 8*a* in Civil Engineering; required of all students having Civil Engineering as a major subject. 5 units, 2d semester (WING, MOSER)

Lec. MWF 8:15; Dft. and Lab. WThF 1:30-4:30

8c. Elements of Design.—Courses 8**a** and 8**b** abridged to meet the requirements of students having Mining, Mechanical, or Electrical Engineering as a major subject. Special applications are made to hoisting and conveying structures, mill buildings, and central station buildings.

Open to students who have completed courses 1 and 2 in Engineering and course 10 in Mining and Metallurgy.

By arrangement 2 or 3 units, 2d semester (WING)

9. Railway Bridges.—This course comprises the determination of the stresses in modern types of railroad bridges, including cantilever and swing spans, masonry arches, and arch ribs; the discussion of the most economical types, spans, and dimensions of bridges and bridge members; the study of the methods of constructing sub-aqueous foundations, shop methods, erection, inspection of material, specifications, and other factors influencing the design of bridges. Designs are made by each student to fulfill actual conditions, the parts proportioned, and bills of material prepared. Open to students who have completed course 8. (Lectures two hours per week, drafting nine hours.)

Dft. WThF 1:30-4:30 5 units, both semesters (WING)

D. HYDRAULIC ENGINEERING

12. Water-Supply Engineering for Towns and Districts.—Sources of supply. Collecting and storing of water, either for water supply of towns or for irrigation purposes. Settling, filtering, conducting, and delivering of water, including the study and design of all accessory works. (Three hours lectures and recitations, six hours drafting.) Open to students who have completed courses 2 and 3 in En-

gineering and 4*a* and 8*a* in Civil Engineering; required of all students who take their major in Hydraulic Engineering.

Lec. MWF 10:15; Dft. MT 1:30-4:30

5 units, 1st semester (MARX)

13. Sanitary Engineering.—Including sewerage of towns and drainage of lands. Special attention will be given to the study of all municipal sanitary problems, such as removal of sewage, destruction of garbage, construction, maintenance, sweeping, and repairs of streets and pavements. (Three hours lectures and recitations, six hours drafting.) Open to students who have completed courses 2 and 3 in Engineering and 4*a*, 8*a*, and 12 in Civil Engineering; required of all students who take their major in Hydraulic Engineering.

5 units, 2d semester (MARX)

15. Construction of Canals, River and Harbor Improvements.—Lectures and designing as per arrangement. Open to students who have completed courses 2*a*, 2*b*, and 3 in Engineering and 4*a* and 8*a* in Civil Engineering

MT 1:30-4:30 2 units, both semesters (MARX)

16. Technical Seminary.—Study of German and French technical journals. Open only to fourth-year students in Civil Engineering.

By arrangement 2 units, both semesters (MARX)

II. MECHANICAL ENGINEERING

WILLIAM FREDERICK DURAND, GUIDO HUGO MARX, WILLIAM RANKINE ECKART, Professors.

EVERRETT PARKER LESLEY, CHARLES NORMAN CROSS, Assistant Professors.

LAWRENCE EDMINSTER CUTTER, EDWARD JOHN STANLEY, JAMES BENNETT LIGGETT, THERON JAMES PALMATEER, ROBERT HENRY HARCOURT, CLARENCE PERCY CAMPBELL, Instructors.

The following courses constitute a five years' curriculum leading to the degree of Mechanical Engineer. Students successfully completing the first four years of this curriculum will be granted the degree of Bachelor of Arts.

[Numbers following subjects indicate number of units credit for the year.]

FIRST YEAR—Applied Mathematics (10); Freehand Drawing (2); Chemistry (9); Shop Work (6); French or German (6); Mechanical Engineering A (2).

SECOND YEAR—Applied Mathematics (6); Mechanics (10); Linear Drawing and Descriptive Geometry (6); Physics (8); Shop Work (2).

THIRD YEAR—Applied Mechanics (5); Hydraulics (3); Machine Drawing (2 or 3); Elementary Machine Design (5); Technical English Composition (2); Surveying (2); Metallurgy (3); Physics (2); Electrical Engineering (2); Shop Work (3).

FOURTH YEAR—Heat Engines (6); Machine Design (8); Experimental Engineering (6); Economics (3); Hydraulic Motors (1); Electrical Engineering (6); Shop Work (6).

FIFTH YEAR—Thermodynamics (1); Advanced Design (3 plus 3 elective); Experimental Engineering (3); Business and Contract Law (3); Shop Administration (3); Power Plants (4); Pumping Machinery (2); Seminary (elective) (4); Thesis (8).

The above represents the requirement for the student entering regularly with minimum mathematics and no advanced credit. For such student, in addition to the above curriculum, there should be a maximum possible elective among other subjects in other departments of the University of nineteen units. For students who may bring advanced credit in drawing, shop work, chemistry, and other subjects, the amount of possible elective may be considerably increased.

A. General Survey of Engineering Industries.—Special lectures and assigned topics. Required of first-year students.

By arrangement 1 unit, each semester

1-8. Shop Work:—

1a. Forge Practice.—(2 exercises a week, half year.)

1b Lecture in Forge Work.—

3a. Foundry Practice.—(2 exercises a week, half year.)

3b. Lecture in Foundry Work.—

5. Woodworking.—(2 exercises a week, half year.)

6a. Pattern Shop Practice.—(2 exercises a week, half year.)

6b. Lecture in Pattern Shop Work.—

Courses 3*a* and 3*b* are prerequisite to courses 6*a* and 6*b*.

7a. Elementary Machine Shop Practice.—(2 hours a week, half year.)

7b. Lecture in Machine Shop Work.—

Courses 1*a* and 1*b* are prerequisite to courses 7*a* and 7*b*.

8. Advanced Machine Shop Practice.—(3 hours a week, half year.)

Courses 1-8 are open to all students, and required of students in Mechanical Engineering. 2 or 3 units, each semester

(LESLEY, STANLEY, LIGGETT, PALMATEER, HARCOURT)

10. Shop Administration.—A course of lectures on workshop organization and administration, factory accounting, wage systems, selec-

tion of machinery, factory methods, etc. Prerequisites: courses 1 to 7 inclusive.

TTh 9:15 2 units, 2d semester (LESLEY)

11. Elementary Machine Drawing.—Practice in making freehand sketches of machine parts from which working drawings, tracings, and blueprints are developed. (Six or nine hours a week in drafting-room.) Prerequisite: course 1*a* in Engineering, and first semester's work in Engineering 1*b* or its equivalent.

(I) TTh 9:15-12:15; (II) MT 1:30-4:30
2 or 3 units, either semester (CUTTER)

13. Elementary Machine Design.—

a. Function of machines; motion, force, and work in machines; valve gears. (Three hours a week lectures and recitations, second semester.)

b. Drafting course applying the principles treated in *a.* (Six hours a week drafting, second semester.)

Prerequisites: course 11 in Mechanical Engineering and course 1*b* in Engineering. Courses *a* and *b* must be taken together and are required of students in Mechanical Engineering.

Lec. MWF 8:15; Drafting M or T or F 1:30-4:30
5 units, 2d semester (G. H. MARX)

14. Machine Design.—Study of machine details, such as fastenings (including bolts and screws, riveted joints and boiler design, keys, fits and fitting); axles, shafts, and spindles; journals, boxes, and lubrication; ball and roller bearings; sliding surfaces; couplings and clutches; gear, belt, rope, and chain transmission systems; flywheels; springs; frames, and supports; etc. (Two hours a week recitation and lectures, six hours in the drafting-room, throughout the year.) Open to students who have completed course 13 in Mechanical Engineering, and who are taking course 2 in Engineering; required of students in Mechanical Engineering.

Lec. TTh 8:15; Dft. (1st sem.) MT, (2d sem.) WTh, 1:30-4:30
4 units, both semesters (G. H. MARX)

15. Machine Design.—An abridged treatment of the field covered in courses 13 and 14. (Three hours a week recitations and lectures, six hours a week in the drafting-room, first semester.) Open to students who have completed Engineering 1*b*, Mechanical Engineering 11, and are taking Engineering 2. Intended for Engineering students whose major subject is not Mechanical Engineering.

Lec. MWF 8:15; Dft. ThF 1:30-4:30
5 units, 1st semester (G. H. MARX)

16. Advanced Machine Design.—Design of complete machines. Students may elect machine tools, cranes, steam or gas engines, or special problems. (One lecture and six hours drafting per week.) Intended for fourth-year students who have completed courses 14, 31, 33. 3 units, both semesters (G. H. MARX, CUTTER)

Lec. F 10:15; Dft. 1:30-4:30, by arrangement

21-25. Experimental Engineering.—

21. Calibration and Use of Engineering Apparatus and Instruments, including gages, thermometers, planimeters, indicators, dynamometers, meters, fuel calorimeters, and the testing of lubricating oils. (One lecture, three hours in the laboratory, and five hours on reports, per week.) Required of fourth-year students in Mechanical Engineering.

Lec. Th 10:15; Lab. 1:30-4:30 by arrangement

3 units, 1st semester (ECKART, CROSS)

22. Testing of Steam Engines and Boilers, including determination of engine clearance; valve setting; mechanical efficiency, steam calorimetry, economy and complete tests of simple and compound engines, steam turbines, gas engines; tests for speed regulation, and the testing of boilers. (One lecture, three hours in the laboratory, and five hours on reports, per week.) Open to students who have completed courses 21 and 31. Required of fourth-year students in Mechanical Engineering. 3 units, 2d semester (ECKART, CROSS, CAMPBELL)

Lec. F 10:15; Lab. 1:30-4:30 by arrangement.

23. Testing of Pumping Machinery and Power Plant Auxiliaries, including steam and centrifugal pumps, hot-air pumping engines, injectors, heaters and economizers, blowers, condensers, refrigerating machinery, and a complete power-plant test. (One lecture, three hours laboratory, and five hours on reports per week.) Open to students who have completed courses 21 and 22. Required of fifth-year students in Mechanical Engineering.

Lec. T 9:15; Lab. 1:30-4:30 by arrangement

3 units, 1st semester (ECKART, CROSS)

24. An Abridged Course in Experimental Engineering, intended for Civil Engineering, Geology and Mining, and Chemical Engineering students. Includes the calibration of apparatus, testing of steam and gas engines, steam turbines, boilers, pumps, and water wheels. (One lecture, three hours in the laboratory, and five hours on reports, per week.) Open to students who have completed course 31.

Lec. T 9:15 3 units, 2d semester (ECKART, CROSS, CAMPBELL)

25. An Advanced Course in the Investigation of Engineering Problems. Open to all students who have completed courses 21, *22*, and *23*.

1 to 5 units, both semesters (Eckart, Cross)

31. Heat Engines.—Mechanical theory of heat and its applications. (Two lectures and three hours' office work per week.) Required of fourth-year students in Mechanical Engineering.

TTh 9:15-12:15 3 units, 1st semester (Durand)

33. Heat Engines.—Continuation and application of course 31. (Two lectures and three hours' office work per week.) Required of fourth-year students in Mechanical Engineering. Lecture and office work as for 31.

TTh 9:15-12:15 3 units, 2d semester (Durand)

34. Thermodynamics.—A course in theoretical thermodynamics, with special reference to heat engines, and intended to supplement course 6, which is a prerequisite. Required of fifth-year students in Mechanical Engineering.

M 8:15 1 unit, 2d semester (Durand)

35. The Mechanical Engineering of Central Power Stations.—Lectures. Prerequisite: course 31.

MW 10:15 2 units, 1st semester (Durand)

36. Pumping Machinery.—A lecture course for fifth-year students. Prerequisite: course 31, first semester.

MW 10:15 2 units, 2d semester (Durand)

37. Seminary.—A weekly conference for the discussion of current engineering literature and of special topics. Open to senior and advanced students only.

By arrangement 1 unit, both semesters (Durand)

Laboratory Fees.—Courses 1*a*, 3*a*, 7*a*, four dollars per credit hour; courses 5, 6*a*, three dollars per credit hour; course 8, two dollars per credit hour; courses 21, *22*, *23*, 24, six dollars; course 25, two dollars per credit hour.

III. ELECTRICAL ENGINEERING

Harris Joseph Ryan, Professor
†Samuel Barclay Charters, Jr., Assistant Professor.
James Cameron Clark, Acting Assistant Professor.
Axel Nielsen, Instructor.

Beginning with the class entering in August, 1912, the Department discontinued the registration of students as undergraduate majors

†Died December 29, 1912, while absent on leave.

in Electrical Engineering, and will draw its students for graduate work from among those graduating with the degree of A. B. in the first four years of the five years curriculum in Mechanical Engineering. The successful completion of a year's graduate work in the Department of Electrical Engineering will lead to the degree of Engineer in Electrical Engineering.

The Department will continue to give all undergraduate instruction as required in the engineering departments of the University, and in particular, the required undergraduate instruction scheduled in the first four years of the curriculum in Mechanical Engineering. The work as now laid down for the first four years in Mechanical Engineering will form a suitable and effective preparation for the special graduate work leading to the degree of Engineer in the Department of Electrical Engineering.

The following courses of instruction are given. Those required for the undergraduate degree with Electrical Engineering as a major subject (for students registering prior to August, 1912) are so specified; in addition the work required for this major includes the following courses in other departments:

Applied Mathematics A, B, 1, 2, 3; Engineering 1*a*, 1*b*, 2*a*, 2*b*, 3*a*; Civil Engineering 4*b*; Mechanical Engineering 1*a*, 1*b*, 3*a* 3*b*, 5, 6*a*, 6*b*, 7*a* 7*b*, 11, 13*a*, 13*b*, 21, 22, 31, 33, 35; Physics 6*a*, 6*b*, 9, and photometry; Chemistry 1 and *a**; English, A.

Students entering with advanced credit may also elect such other work as time and preparation permit.

A.—Survey of Electrical Industries.—Advisory instruction to acquaint the underclassman with his duties as an electrical engineering student. For second-year students.

2d and 4th F 8:15 1 unit, each semester (RYAN)

1. Elements of Electrical Engineering.—An abridged course in the industrial applications of electricity, intended for non-electrical engineering students. Prerequisites: First five semesters of any of the Stanford Engineering courses.

Lec. MWF 11:15; Lab. by arrangement
4 units, 1st semester (RYAN, CLARK, NIELSEN)

2. Electrical Energy.—Required of third-year students in Electrical Engineering. Class and laboratory instruction in the technology of magnetic, electric, and electrostatic phenomena, electrical machinery

*Laboratory courses in chemistry and other subjects must be taken up as scheduled. These courses are prerequisite in character and cannot be deferred; the student must, therefore, be prepared to meet the corresponding laboratory fees when due.

and auxiliaries in continuous and alternating current working. Second semester prerequisites: Applied Mathematics A, B, 1, 2, 3; Engineering 1*a*, 1*b*, 2*a*, 2*b*; Mechanical Engineering 11, 13*a*, 13*b*; Physics 6*a*, 6*b*, 9; Electrical Engineering 2*a* (first semester).

2a. Recitations and Experimental Demonstrations.—

(1st sem.) Lec. M 8:15; (2d sem.) Rec. MTWTh 8:15
1 unit, 1st semester; 4 units, 2d semester (NIELSEN)

2b. Laboratory Work.

MTWTh 1:30-4:30 4 units, 2d semester (CLARK, NIELSEN)

[Course 2 is supplemented by Physics 9, laboratory work in electrical measurements (4 units, 1st semester).]

3. Electrical Engineering.—Required of fourth-year students in Electrical Egineering Lectures, laboratory, and class work, elements of design to be elected in a particular specialty. Prerequisites: Electrical Engineering, 2*a*, 2*b*; Engineering, 3*a*; Mechanical Engineering, 21, 31, 33.

3a1. Lectures.—General Practice: (1) Standardization authorized by the A. I. E. E. (2) Fire Hazard, National Electrical Code. (3) Transmission Economics. (4) Standard Machinery, Auxiliaries and Structural Supplies. (5) Municipal Distribution of Electricity for Miscellaneous Service. (6) Long distance transmission of power for general purposes. (7) Discussion of typical installations. (8) Elements of finance controlling the uses of electricity. (9) Survey of electrical industries. (10) Historical and biographical sketches; Proceedings of the American Institute of Electrical Engineers.

(1st sem) MTWTh 9:15; (2d sem.) TTh 9:15
4 units 1st semesters; 2 units, 2d semester (RYAN)

3b1. Laboratory Work.—Characteristic performance of standard machinery and auxiliary apparatus; tests of machinery and auxiliaries for capacity, acceptance, and technical data.

By arrangement 4 units, 1st semester (CLARK, NIELSEN)

3b2. Recitations, supplementing 3b1.

TWTh 8:15 3 units, 1st semester (NIELSEN)

3c. Applications.—Drill work, use of professional literature, and problems assigned in one of the following elective specialties:

c1 Elementary designs of power plants and systems of distribution; studies of corresponding practice as reported in literature and by visits to neighboring plants.

c2. Design studies in electric railway practice.

c3. Design studies in intelligence transmission.

4 units, 2d semester (RYAN)

Students in Electrical Engineering are not permitted to register for particular sections only in courses 2 and 3. The work in all sections of either course must be concurrent. A student who fails to do satisfactory work in these courses as a whole may be required to repeat all sections of a corresponding course, concurrently.

10. Graduate Work.—

a. Advanced study and investigation as assigned to meet the needs of the individual.

b. Preparation of reports based upon results obtained in graduate work and their presentation to the Stanford Branch of the American Institute of Electrical Engineers.

c. Preparation of thesis required for the degree of Engineer in Electrical Engineering. (RYAN)

FIVE-YEAR CURRICULUM

Those who have decided ability for analysis, technical study, and investigation can profit by an extra year in the University. Students of this class may extend their studies through five years by one of two plans, as follows:

1. By completing the regular four-year curriculum in Mechanical Engineering, receiving the degree of Bachelor of Arts, and by applying an additional year to graduate work in Electrical Engineering elected to meet the requirements of the individual, the regulations of the University, and the approval of the major professor, receiving the degree of Engineer.

2. By the pursuit of a five-year curriculum that includes the regular four-year curriculum in Mechanical Engineering and other studies so selected, correlated, and scheduled as to meet the needs of the particular individual and the approval of the major professor. At the completion of this course the University will grant the degree of Bachelor of Arts, and the department will certify the character of the work taken.

The Stanford Branch of the American Institute of Electrical Engineers is an organization authorized by the Institute and maintained by the members of the senior class for the discussion of the Proceedings of the Institute, and of other topics as assigned, and the review of current electrical literature.

Laboratory Fees.—Two dollars per unit of university credit.

Syllabus Fees.—Applicable to syllabus, lantern slides, and charts. One dollar per course-section.

MEDICINE

RAY LYMAN WILBUR, Executive Head.
GEORGE BURBANK SOMERS, Secretary of the Medical Faculty.

BUILDINGS AND EQUIPMENT

The buildings in San Francisco occupy four fifty-vara lots bounded by Clay, Sacramento, and Webster streets, and consist of the Clinical and Laboratory Building, including Lane Hall; Lane Hospital, a modern building in brick and stone, with a capacity of one hundred and eighty beds; the Nurses' Home; and the Lane Medical Library. The Clinical and Laboratory Building has recently been remodeled and is devoted entirely to outpatient clinics and laboratories.

At Stanford University the buildings and laboratories of the University are used for instruction in Medicine.

LIBRARY FACILITIES

The LANE MEDICAL LIBRARY, which is a part of the University library, was founded by the Directors of Cooper Medical College, as provided by the will of Mrs. Levi Cooper Lane.

The new Lane Medical Library Building was formally opened November 3, 1912 with addresses by TIMOTHY HOPKINS, EMMET RIXFORD, and DAVID STARR JORDAN. The building was erected with funds originally left for that purpose by Dr. Levi Cooper Lane and $20,000 from the Directors of Cooper Medical College. The cost was about $140,000, and the Library is a fireproof structure of Colusa sandstone, three and a half stories high, with steel stacks accommodating 80,000 volumes. It is located opposite the other medical buildings on the corner of Sacramento and Webster streets.

The Lane Medical Library is a collection of approximately 39,000 volumes. The most valuable historical portion was obtained from the New York Hospital, the oldest medical library in the country. Over 300 periodicals are currently received, and the numerous files of bound journals are being completed as rapidly as possible.

The University library contains sets of serials relating to anatomy, biology, physiology, pharmacology, and chemistry of particular importance to medical students.

The Lane Medical Library, besides the Lane endowment funds, has received a number of gifts of books and money. Dr. Adolph Barkan, Professor Emeritus of Ophthalmology, has presented the sum of $10,000 to be used for the endowment of the "Adolph Barkan Library of Ophthalmology and the Allied Sciences." A room in the new

building has been set aside for this valuable collection. The Alumni of Cooper Medical College are collecting a fund for the endowment of a special library of Obstetrics and Gynecology in honor of Dr. Henry Gibbons, Jr., formerly Professor of Obstetrics and Dean of Cooper Medical College.

In addition, the income of the Charles G. Lathrop fund of $5,000, the Henry Lee Dodge Memorial fund of $5,000, established by Myra B. Dodge, the J. Henry Meyer, Antoine Borel, and Edward Coleman fund of $2,500 each, the Luther Janna Holton fund of $500, and the income from life memberships, are available for the purchase of books and periodicals and for the maintenance of the Library.

The full privileges of the Library can be obtained by all members of the medical profession and by others, through a life membership of one hundred dollars or a yearly membership of ten dollars; and the privilege of consulting the Library, but not of withdrawing books, for five dollars annually.

Clinical Opportunities

At the San Francisco Hospital the Medical Department controls one hundred beds, averaging about a thousand patients per year. The hospital facilities will be greatly improved with the completion of the new Hospital buildings, which the City of San Francisco is erecting at an expense of two million dollars. It is expected that the Hospital will be completed in 1913.

Lane Hospital was designed as a teaching hospital. It has now over one hundred beds, available for teaching, and it is planned to increase this number in the near future. The Outpatient Department averages about twelve thousand new patients a year, with about 60,000 visits annually.

Hospital Internships

Eight internes are appointed annually at the Lane Hospital. Three of these are Senior Internes and have a continuous service for one year with the option of renewal in any of the following divisions: Medicine, Surgery, or Obstetrics and Gynecology. Five Junior Internes, with an alternating service, are likewise appointed. Three of these are expected to become Senior Internes later. A Senior Externe is also appointed for the Eye, Ear, Nose, and Throat Department. In addition internships are available at the San Francisco Hospital and at other hospitals in the City and the State.

The Lane Medical Lectures

The Lane Medical Lectures, founded in 1896 by Dr. Levi Cooper Lane, are given biennially on medical subjects, and students and the

medical profession are invited to attend. The course for 1911 was given by Dr. Ernest Fuchs, of the University of Vienna, on the subject "The Importance of Ophthalmology in its Relation to Systemic Diseases." The next course will be given in 1913 by Professor A. E. Schaefer, of the University of Edinburgh.

Organization

The Department of Medicine is an integral part of the University, controlled by the Board of Trustees, the President, and the Academic Council in the same manner as are other departments of the University.

The teaching body of the Medical Department consists of: (a) The members of the Medical Department Faculty, which is composed of all Professors, Clinical Professors, Associate Professors, and Associate Clinical Professors giving instruction in the courses included in the Medical curriculum or in graduate courses in Medicine either at Stanford University, or in San Francisco; (b) Assistant Professors and Assistant Clinical Professors; (c) Lecturers, Instructors, Clinical Instructors, and Assistants.

"Professors" and "Associate Professors" are members of the Medical Faculty who are under full salary and who give the main part of their time to the work of instruction. "Clinical Professors" and "Associate Clinical Professors" are of equal rank with Professors and Associate Professors respectively, but are engaged in practice.

The functions of the Medical Faculty and of the Executive Head are defined under the organization of the Faculty of the University for Department Faculties and Executive Heads.

For purposes of administration the work of the Department is organized into Divisions as follows: Anatomy; Bacteriology; Physiology; Chemistry; Pharmacology; Pathology; Medicine, including Pediatrics, Neurology, Psychiatry, Electrotherapy, Actinography, Dermatology and Syphilis, Jurisprudence, Dietetics, and Tropical Medicine; Surgery, including Ophthalmology, Otology, Laryngology, Rhinology, Genito-Urinary Surgery; Obstetrics and Gynecology; Hygiene and Public Health. The Executive of each Division, appointed annually by the President of the University, is the administrative officer of the Division, with duties, with respect to the Division, similar to those prescribed for Executive Heads of Departments.

The Division Faculties consist of all members of the teaching staff of the several Divisions, but only Professors, Clinical Professors, Associate Professors, and Associate Clinical Professors have the right to vote.

The Seven Years' Curriculum

The combined seven years' curriculum—three years of college work and four years in medicine—lead to the degrees of Bachelor of Arts and Doctor of Medicine.

Admission to the Department of Medicine

Three years of collegiate work in Stanford University (approximately ninety unit hours), or its equivalent as accepted by the Committee on Advanced Standing, is required for admission to the Department of Medicine. This preparatory training must include one year of Physics, Chemistry including Qualitative Analysis, and Physiology or Biology, with laboratory work in each, and such a reading knowledge of French or German as shall be acceptable to the Department of Medicine.

Candidates for admission to the Department of Medicine, or for advanced standing in the Department, are permitted to register with one condition, but the condition must be removed within one year to the satisfaction of the head of the Department or Division in which the condition was incurred.

The State Law governing the practice of Medicine in California prescribes that every person before practicing Medicine or Surgery must produce satisfactory testimonials of good moral character and a diploma issued by some legally chartered medical school, the requirements of which shall have been at the time of granting such diploma, in no particular less than those prescribed by the Association of American Medical Colleges for that year. At the present time the Association of American Medical Colleges requires that every medical student must be registered in a medical college or department for four years and that unless he presents a baccalaureate degree from an accredited college or university for entrance into medical college his preparatory course shall have included two years of Latin, or four years of high-school German or French, or its equivalent, provided a satisfactory examination is passed in the elements of Latin grammar, two years of Mathematics, two years of English, one year of History, one year of physics, and six years of further credits in languages, literature, history, or science.*

Students in any Department of the University who desire to enter upon the study of Medicine and who have included in their course of study the subjects required for admission to the Medical Department,

*Candidates for licensure possessing a baccalaureate degree are not required to present certificates for Latin by the Board of Medical Examiners of the State of California at present.

may, at the beginning of their fourth or senior year in the University, enroll as students in medicine and continue as candidates for the degree of Bachelor of Arts.

Under the Major Department system a student, expecting to study Medicine, may select any Major Subject as candidate for the degree of A. B. and may use the electives outside his Major requirements to cover the requirements for admission to the Medical Department and also some of the studies listed in the first three semesters of the Medical curriculum. For the choice of such subjects and the time when they may be taken with advantage, the student is referred to the Departments of Physiology and Histology, and of Chemistry.

A student who is unable to complete the requirements of his Major department and the first year in Medicine by the end of his senior year, through delay in making a choice of Medicine, may nevertheless register in Medicine and be eligible for the degree of A. B. in the Department of Physiology and Histology at the end of the ninth semester—the third semester in Medicine.

Students who have included in their course of study the subjects required for admission to the Medical Department while retaining their registration in their Major Department as candidates for the degree of A. B., must also enroll in the Department of Medicine during the fourth year and pay the fees of the Department in order that this year may count as part of the fourth year's registration in Medicine as required by the law of the State and the regulations of the University.

The Major requirements of the Department of Physiology and Histology include the requirements for admission to the Department of Medicine and may also include the studies of the first year in Medicine.

In the Department of Chemistry, Curriculum C in Medical and Sanitary Chemistry includes the requirements for admission to the Department of Medicine.

Special Workers

Physicians and others who are properly qualified, but not candidates for a degree, may be admitted to work in the Department of Medicine with the permission of the Executive Head of the Department and of the Professor or Professors concerned. Such persons shall be listed as Special Workers.

The Curriculum in Medicine

The required period of study for the degree of Doctor of Medicine is four years (eight semesters). The work of the first three semesters is given at Stanford University and is devoted to anatomy, bacteriology, chemistry, embryology, histology, neurology, pharmacology, and physi-

ology. The last five semesters are devoted to work in the pathological and clinical laboratories and in the hospital wards and the dispensary in San Francisco.

Fees

The tuition fees of the Medical Department are $150 per annum, payable in installments of $75 each semester; $5 per semester for the first four semesters, covering charges for material; and such other deposits to cover breakage or loss of apparatus and materials as may be required in any department or division, these deposits being returnable, less charges for breakage, loss, or wear and tear of apparatus or materials used. The total deposits for this purpose may vary from $10 to 20 per annum.

Requirements for the Degree of Doctor of Medicine

The candidate for the degree of Doctor of Medicine must, according to the laws of the State, have attained the age of twenty-one years, and have attended a medical college of recognized standing for four years. He must further have fulfilled the entrance requirements of the Medical Department of Stanford University before enrolling as a medical student, have satisfactorily completed the required curriculum, passed all examinations, paid in full the required fees, and have spent the last of the four years in medicine at this University.

Regulations Concerning Theses

A Thesis based as much as feasible upon research work will be required of each student. If not done previously, four curriculum hours of the seventh and eighth semesters are to be devoted to its preparation under the supervision of one of the Divisions.

Students of Medicine may select the Division in which they desire to write their Thesis and if properly qualified may begin work on the same at any time before the beginning of the second semester of their fourth year in Medicine. The topic for investigation or the subject matter for study shall be chosen with the advice and consent of the Executive Head of the Division concerned, and no change of subject shall be made without the consent of the Executive under whose direction the work was begun.

Theses may be based wholly or partly upon:

(*a*) An original investigation or the re-investigation of published work.

(*b*) The construction of original models and preparations; the designing or construction of new appliances or apparatus or the description and application of new and improved technical methods.

(*c*) The compilation and analysis of a series of cases or observations.

(*d*) An historical investigation or a critical review of some subject.

The names of students and the subjects for Theses shall be reported to the Executive Head of the Department of Medicine by the Executive Heads of Divisions before December first of the students' fourth year in Medicine.

The Executive Head of the Division in which the Thesis work is done, and two members of the teaching staff to be appointed by the Executive Head of the Department of Medicine, shall constitute a committee to examine and pass upon Theses offered for graduation, but in no case shall a Thesis be accepted which has not been approved by the Executive Head of the Division concerned or which in his estimation represents less than one hundred and twenty hours of work.

If credit given for Theses is counted for the baccalaureate or other degrees it shall not be counted a second time nor shall the candidate be excused from Thesis work in Medicine.

Completed Theses must be typewritten upon standard paper and delivered to the supervising executive, not later than thirty days before the date of Commencement.

Any Thesis of special merit may, by vote of the Faculty of the Department of Medicine, be recommended for publication and binding upon the condition that four copies be deposited with the Librarian of the Leland Stanford Junior University, two of which shall be sent to the Lane Medical Library; *provided,* such publication shall not preclude the previous publication of such Thesis by the Divisions concerned, but four copies must be deposited with the Librarian of the University as above specified.

All apparatus and appliances, models and preparations shall be the property of the Leland Stanford Junior University, and as such shall remain in charge of the Division under the direction of which they were prepared. (Theses were made optional for the year 1912-13 by action of the Medical Faculty in October, 1912.)

Advanced Degrees in the Medical Department

The Divisions of the Medical Department are considered as equivalent to other departments of the University in respect to candidacy and rquirements for the degrees of Master of Arts and Doctor of Philosophy, and all the foregoing regulations apply to these divisions and division faculties as to departments and department faculties, with the following modifications and limitations:

1. Candidates for these degrees must have received the degree of A. B. at Stanford or an equivalent degree elsewhere, and must have completed all requirements for admission to the Department of Medicine, and such other requirements as each division faculty may prescribe.

2. Time spent in candidacy for the degree of Master of Arts or Doctor of Philosophy will not be counted toward the degree of Doctor of Medicine.

3. Candidates for these degrees in the divisions of Medicine, Surgery, and Obstetrics and Gynecology, must have received the degree of Doctor of Medicine.

THE CURRICULUM

First Semester	Lec. hours	Lab. hours	Units of credit
Neurology—Gross and Minute anatomy of the Brain and Spinal Cord	1	6	3
Histology	1	6	3
Gross Anatomy	1	10	4-7
Physiology—Muscle, nerve, circulation	1	5	3
Embryology		6	2
	4	33	15-18
Second Semester			
Neurology	1	6	3
Histology	1	6	3
Gross Anatomy	3	16	5-8
Physiology—Digestion, respiration, nutrition, metabolism, etc.	1	5	3
Organic Chemistry	3		3
Toxicology (optional)		[9]	[3]
	9	33	17-20
Third Semester (First Semester of Second Year)			
Bacteriology	2	7	3-6
Gross Anatomy	1	7	3-5
Pharmacology	2	5	4
Physiological Chemistry	3	9	6
Physiology—Nervous system, sense organs, etc.	1	5	3
	9	33	19-24

FOURTH SEMESTER (Second Semester of Second Year)

	Hours per week
Topographical and Applied Anatomy	9
Medicine (Physical Diagnosis, etc.)	4½
Surgery (Fractures, etc.)	4½
General Pathology (Lectures and Discussions)	5
Pathological Histology (Laboratory)	7½
Pharmacology and Materia Medica	3
Physical Therapeutics	2
	35½

FIFTH SEMESTER (First semester of Third Year)

Medicine (Lectures and Clinics)	13½
Surgery (Lectures and Clinics)	7
Special Pathology	2
Clinical Pathology (Laboratory)	2½
Obstetrics	3
Surgical Pathology	4
Autopsy Work	2
	34

SIXTH SEMESTER (Second Semester of Third Year)

Medicine (Recitations and Lecture Work)	9½
Surgery (Recitations and Lecture Work)	7
Special Pathology	2
Surgical Pathology	4
Clinical Pathology (Chemistry)	2½
Autopsy Work	2
Neurology	2
Obstetrics	3
Pediatrics	2
	34

SEVENTH SEMESTER (First Semester of Fourth Year)

Medicine	6
Surgery	4
Obstetrics	2
Ophthalmology	2
Genito-Urinary Diseases	2
Gynecology	3
Dermatology	1½

SEVENTH SEMESTER (First Semester of Fourth Year)—Cont'd.

Hygiene	1
Legal Medicine (Lectures)	1
History of Medicine, etc. (Lectures or Discussions)	1
Neurology	2
Pediatrics	4
Ear, Nose, and Throat	2
Thesis	4
Actinography	1
	36

EIGHTH SEMESTER (Second Semester of Fourth Year)

Medicine	5
Surgery	3
Obstetrics	2
Ophthalmology	2
Genito-Urinary Diseases	1
Gynecology	3
Dermatalogy and Syphilis	1½
Hygiene	1
Psychiatry (Lectures)	1
History of Medicine, Journal Club, Ethics, etc.	1
Neurology	1
Pediatrics	4
Dietetics	1
Ear, Nose, and Throat	2
Thesis	4
	33

I. DIVISION OF ANATOMY

ARTHUR WILLIAM MEYER, Professor.
FRANK ELLSWORTH BLAISDELL, Assistant Professor.
EDGAR DAVIDSON CONGDON, Instructor.
ERNEST RISLING, Technical Assistant.

HUMAN ANATOMY

1. Osteology.—Students will be expected to familiarize themselves thoroughly on their own initiative with the surface anatomy of bones of the skeleton. The laboratory work will be supplemented by recitations and lectures dealing with the internal architecture, the development, growth, and regeneration of typical bones, their nutrition and

innervation, the mechanics of the skeleton as a whole, and the changes it undergoes from birth to old age.

2 to 3 units, 1st semester (MEYER, CONGDON)

2-3-4. Dissection of (2) the Head, Neck, and Thorax; (3) the Upper Extremity; (4) the Abdomen and Lower Extremity.—These courses are given simultaneously throughout the year and can be begun at any time. No one will be assigned to less than one of the above parts nor will credit be given for less, save by special arrangement.

2 to 5 or more units (MEYER, CONGDON)

5. Topographical and General Applied Anatomy.—In this course special emphasis will be laid upon the laboratory study of frozen sections made in all planes, and special preparations of various regions and structures. Particular attention will be given to surface landmarks, palpable structures, segmental distribution of nerves, modifications of the vascular and lymphatic systems, to terminal and collateral circulation, epiphyseal relations, the sympathetic system in its relation to referred pain, etc., the deep fasciæ and their relation to effusions, contractures, etc., and to the practical aspects of anatomy as related to medicine, surgery, and the various specialties. Fourth semester, in San Francisco. (BLAISDELL)

OPTIONAL AND ADVANCED COURSES

6. Topographical Anatomy.—The work will consist of laboratory study of frozen sections of the cadaver, made in various planes, and of dissected and specially injected preparations. It is suggested that students who can afford the time supplement courses 2, 3, and 4 by the respective portions of course 7 immediately on completing the dissection of a part. Open to students who have completed courses 1, 2, 3, and 4. Third semester, by arrangement. (MEYER)

7. The Anatomy of the Central Nervous System.—This course will consist of a laboratory study of the gross and microscopic anatomy of the adult human brain and spinal cord, with such references to embryology and comparative anatomy as will be found advisable. Open to a limited number of physicians and others by special arrangement. Twice or thrice weekly in the first semester. (BLAISDELL)

10. Human Embryology.—This course will be offered as soon as adequate provision can be made. Development of the chick as a prerequisite. Elective.

11. Conferences on Assigned Topics.—One hour a week per group will be devoted to a discussion of various anatomical problems and obscure relations by those who are dissecting or have dissected a given part. Second semester. Optional. (MEYER)

The facilities of the laboratory are always at the disposal of properly qualified students or physicians who desire to undertake the investigation of some problem in gross or microscopic anatomy or in embryology.

Requirements for Advanced Degrees

In addition to the requirements published in the University Register and the Announcement of the Department of Medicine, students desiring to be admitted to candidacy for the degree of Master of Arts in Anatomy must have satisfactorily completed one year's work in histology and microscopic anatomy, at least one semester of embryology, and possess a knowledge of laboratory technique adequate for the investigation to be undertaken. For admission to candidacy for the degree of Doctor of Philosophy a reading knowledge of both French and German is further required.

Deposit Fees.—A deposit of $10, to cover damage to or loss of bones, is required of all students in Anatomy. This sum, less charges for damage or loss, is returnable at the close of the year. Students of Anatomy who are not registered medical students are charged a fee of $15 for courses 2, 3, and 4, and $5 for course 1.

Embryology.—Development of the chick through the first three days of incubation. [Course 11 in the Department of Zoology.]
2 units, 1st semester (Price)

II. DIVISION OF BACTERIOLOGY

Hans Zinsser, Professor.
Arthur Meinhart, Technical Assistant.

1. General Bacteriology.—A practical laboratory course in which students become familiar with the preparation of media, general bacteriological technique, and study the pathogenic bacteria culturally. This course lays special stress on the relationship of bacteria to disease and problems of infection. Three laboratory periods and one lecture a week.
4 units, 3d semester (Zinsser, ———)

2. Immunity.—Lectures covering the problems relating to immunity against infectious diseases, and serum therapy. Demonstrations of serum technique. Two lectures weekly, third semester. This course is coördinated with course 1 and may be taken in conjunction with it.
(Zinsser)

3. Bacteriology in Relation to Public Health.—General bacteriological technique; bacteriology of soil, air, water, and milk. This course lays special stress on problems of hygienic interest; laboratory exercises on the examination of water, soil, and milk. One lecture and two laboratory periods. Elective. 3 units (Zinsser, ———)

4. Conferences on Recent Problems in Immunity.—Once a week in the form of a seminar. Open only to students who have taken courses 1 and 2. 1 unit, 2d semester (ZINSSER)

5. Technique of Immunology.—This course will be given in the second semester of each year to advanced students. Owing to the nature of the work the class will be limited to ten. The work will comprise the production, titration, and practical study of antibodies, antitoxin standardization, complement, fixation, etc. Fee $20 to $25.

(ZINSSER, ———)

Properly qualified students or physicians will be admitted to the laboratory for special work.

Fees.—Students who are not medical students will be charged a fee of $10 per laboratory course, and will be required to make a deposit of $5 for breakage—returnable at the completion of course in proportion to apparatus returned.

III. DIVISION OF CHEMISTRY

JOHN MAXSON STILLMAN, ROBERT ECKLES SWAIN, Professors.
JOHN STEPHEN HORN, Assistant.

1. Organic Chemistry.—A lecture course embracing a study of the classification, structural formulæ, and properties of the more important compounds of carbon. The chemical relationships of the larger groups of organic compounds, alcohols, aldehydes, and ketones, acids, amines, and the halogen, sulphur, and nitrogen compounds will be emphasized special attention being given throughout the course to those compounds which are of physiological and pathological interest. 3 units, 2d semester (SWAIN)

2. Toxicology.—A laboratory course, accompanied by informal lectures, dealing with the more important poisons, their physiological action and the prominent reactions employed in their identification. A search for the common poisons, based on a systematic scheme of analysis, will be made on artificially prepared materials. Students who have had no previous training in quantitative analysis will be given a preliminary course in volumetric and gravimetric analysis. Optional. 3 afternoons, 2d semester (SWAIN)

3. Physiological Chemistry.—A laboratory course including a preliminary study of the proteins, carbohydrates, and fats, and the action of the various digestive fluids upon them, followed by a chemical examination of the bile, blood, milk, the chief tissues of the animal body, and the excretions.

3 afternoons, 3d semester (SWAIN)

4. Physiological Chemistry.—Lectures on the chemical composition and action of the tissues and secretions of the animal body, the digestion of foods, and the elimination of waste products.

3 units, 3d semester (SWAIN)

[Students enrolled as Medical students will be required to deposit $10 breakage fee for the laboratory courses in Toxicology and Physiological Chemistry. Other University students will pay the usual fee of $25.]

IV. DIVISION OF HYGIENE AND PUBLIC HEALTH

WILLIAM FREEMAN SNOW, Clinical Professor.

1. Hygiene.—This course is divided as follows:

(*a*) Required reading, covering the usual information essential to an understanding of the principles of public health and hygiene;

(*b*) Lectures on organized public health work, covering the administration of federal, state, and local health departments (1st semester);

(*c*) Lectures on Medical Sociology, covering the activities of various types of welfare organizations (2d semester).

The practicing physician's duties and the opportunities in the field of preventive medicine are emphasized and illustrated by field trips to quarantine stations and health departments.

V. DIVISION OF MEDICINE

RAY LYMAN WILBUR (executive), JOSEPH OAKLAND HIRSCHFELDER (emeritus), Professors.

WILLIAM FITCH CHENEY, LANGLEY R. PORTER, ANDREW WILLIAM HOISHOLT, Clinical Professors.

HARRY R. ALDERSON, HAROLD PHILLIPS HILL, Associate Clinical Professors.

THOMAS ADDIS, Assistant Professor.

EMANUEL CHARLES FLEISCHNER, MORTON RAYMOND GIBBONS, WALTER WHITNEY BOARDMAN, WALTER FRANK SCHALLER, WILLIAM REDWOOD PRICE CLARK, FLORENCE MABEL HOLSCLAW, Clinical Instructors.

HOWARD FELIX ADLER, WILLIAM HENRY BANKS, GEORGE DUNLAP LYMAN, PETER HARRISON LUTTRELL, LEWIS DURANT MEAD, ARTHUR ALOYSIUS O'NEILL, ROLAND BEATTY TUPPER, ROSCOE GOLDEN VAN NUYS, JULIAN MAST WOLFSOHN, HENRY HERBERT YERINGTON, Assistants.

SUBDIVISIONS

PEDIATRICS
NEUROLOGY
PSYCHIATRY
JURISPRUDENCE
DERMATOLOGY AND SYPHILIS
ELECTROTHERAPY
ACTINOGRAPHY
TROPICAL MEDICINE
DIETETICS

The instruction in Medicine begins in San Francisco with the fourth semester, with practical work in Physical Diagnosis and lectures and demonstrations in Physical Therapeutics. From the fifth to the eighth semester inclusive, the general field of Medicine will be covered by means of clinics, practical demonstrations, bedside instruction, and clinical laboratory work. As far as feasible didactic and theoretical teaching will be made secondary to demonstrations and individual work on the part of the student. Therapeutics will be taught in immediate connection with Medicine.

1. Physical Diagnosis and Introduction to Medicine.—This course lays the foundation for the work of Medicine of the third and fourth years, and consists largely of practical instruction in connection with the dispensary, in the methods of physical diagnosis and in history taking. 4½ hours, 4th semester (WILBUR, ADDIS)

2. Physical Therapeutics.—In this course is given a practical discussion with demonstrations, of various methods aside from drugs, for the treatment of disease, with particular reference to the physiological problems involved. Hydrotherapy, Balneotherapy, Climatology, Electrotherapy, Gymnastics, and Massage are particularly considered.

2 hours, 4th semester (WILBUR)

3. Medicine, Section Work, and Clinics.—Throughout the fifth semester for two hours each morning, the students will spend their time in the dispensary or wards in practical medical work and in attending clinics and recitations. One hour per week will be devoted entirely to the discussion of assigned topics. At least once per week a general clinic for third- and fourth-year students will be given.

11 hours, 5th semester (WILBUR, CHENEY, ADDIS, BOARDMAN)

4. Medicine, Section Work, and Clinics.—Three mornings per week a period of two hours of practical medical work at the Lane Hospital and in the Dispensary, together with a weekly clinic for third- and fourth-year students.

7 hours, 6th semester (WILBUR, CHENEY, ADDIS)

5. Medicine: Recitations and Demonstrations, Experimental Medicine.—Throughout the year the third year class will spend two and

one-half hours per week in recitations covering assigned text book work and in a discussion with demonstrations of pathological physiology.
2½ hours, 7th and 8th semesters (Wilbur, Addis)

6. Clinical Pathology.—One afternoon, laboratory period, with some lectures, in microscopical and clinical diagnosis, including the methods of examining blood, urine, sputum, gastric contents, faeces, etc.
2½ hours, 5th and 6th semesters (Addis)

7. Pediatrics.—Recitations and demonstrations in connection with the Dispensary. A certain amount of section work in the Clinic will also be offered.
2 hours, 6th semester (Porter, Fleischner)

8. Nervous Diseases.—Recitations and demonstrations in the Dispensary. 2 hours, 6th semester (Hirschfelder)

9. Medicine: Ward Work and Clinics.—Lane Hospital. The Senior class is divided into two sections. Section I is assigned to Lane Hospital for the mornings of the 7th semester and Section II for the 8th semester. Four hours per week will be devoted to bedside study of medical cases, and there will be a weekly clinical conference. 5 hours, 7th and 8th semesters (Wilbur)

10. Medicine: Ward Work and Clinics.—San Francisco Hospital. The Senior class is divided into two sections. Section II is assigned to the San Francisco Hospital for the mornings of the seventh semester, and Section I for the eighth semester. Five hours will be given to bedside instruction, and there will be a set medical clinic Saturday forenoon. 6 hours, 7th or 8th semester (Hill)

11. Neurology.—Lane Hospital. A weekly clinical conference will be held in connection with the outpatient dispensary and the wards of the Hospital. 1 hour, Section I, 7th semester; Section II, 8th semester. (Schaller)

12. Neurology.—San Francisco Hospital. Two hours per week are assigned for the clinical study of the neurological cases in the Stanford wards at this Hospital. 2 hours, Section I, 8th semester; Section II, 7th semester. (Schaller, Hyman)

13. Pediatrics.—Lane Hospital and Outpatient Department. Four hours of clinical work weekly consisting of a study of the cases in the children's ward and of clinical lectures in the dispensary. 4 hours, Section I, 7th semester; Section II, 8th semester (Porter)

14. Pediatrics.—Recitations. The general field of Pediatrics will be reviewed by means of recitations, lectures, quizzes, and demonstrations. 2 hours, 7th and 8th semesters (Porter)

15. Psychiatry.—A weekly lecture and clinic upon mental diseases. 1 hour, 7th semester (Hoisholt)

16. Dermatology and Syphilis.—A weekly clinical demonstration in Lane Hospital or the Dispensary. 1 hour, 7th semester (Alderson)

17. Dermatology and Syphilis.—Two hours per week of clinics, recitations, and demonstrations upon the diseases of the skin. 2 hours, 8th semester (Alderson)

18. Actinography.—Practical instruction in the Roentgen Ray laboratory of the Lane Hospital (including radiotherapy) and plate interpretation. 1 hour, Section I, 7th semester; 1 hour, Section II, 8th semester. (Boardman)

19. History of Medicine.—In association with the other divisions a weekly lecture or recitation will be held. The aim will be to have each division present the historical side of Medicine which is of most interest to it. The students will be assigned a certain amount of journal and other preparatory work. 1 hour, 7th and 8th semesters. (Ophüls, Stillman, Spalding, Snow, Wilbur)

20. Jurisprudence.—The instruction in this course will be divided among the various divisions, each one covering the points most essential to it. 1 hour, 7th semester. (Woodward, Cathcart, Hohfeld, Kirkwood, Dickson, Stillman, Spalding, Snow, Wilbur)

21. Dietetics.—A recitation and lecture course of one hour per week. 1 hour, 8th semester (Wilbur)

22. Experimental Medicine.—Well equipped laboratories for medical research are available to capable students. The facilities of the wards and the dispensary may be used in association with this work. Optional. (Wilbur, Addis)

23. A Special Course will be offered to well trained physicians in the laboratories and the dispensaries and hospitals. Such students may register for advanced degrees, or as "Special Workers." (Wilbur, Addis)

VI. DIVISION OF OBSTETRICS AND GYNECOLOGY

Alfred Baker Spalding, Professor.

George Burbank Somers, Clinical Professor of Gynecology.

Henry Walter Gibbons, Clinical Instructor.

Shadworth Oldham Beasley, Mario Isnardi, Chester Biven Moore, Anna Elizabeth Rude, Frank Pixley Topping, George Augustus Wood, Assistants.

1. Obstetrics, Recitations, Demonstrations, and Manikin Exercises.—The general principles of Obstetrics are considered in this course. Two hours a week are devoted to recitations. These hours are alternated with one hour a week which is devoted to the presentation of pathological specimens, clinical conferences, and exercises in obstetrical examination and operative procedures on the manikin.

3 hours, 5th and 6th semesters (SPALDING)

2. Practical Obstetrics.—For periods of two weeks, the Senior student is detailed for his entire time as assistant to the Obstetrical interne. During this period he takes histories, examines ante-partum and post-partum patients, attends out patients in labor, assists the interne with ward patients in labor, witnesses operations, makes daily rounds of the Hospital cases, makes milk mixtures under supervision in the milk laboratory, and visits the home patients during the puerperal period. 4 hours, 7th semester (SPALDING, MOORE)

3. Gynecology.—Recitations. Particular attention is devoted to the subjects of pathology and diagnosis. Recitations are interspersed with demonstrations on manikins, models, pathological specimens, and microscopic slides and clinical conferences for the study of the more common gynecological ailments.

2 hours, 7th and 8th semesters (SPALDING, GIBBONS)

4. Practical Gynecology.—In this course instruction in history taking, pelvic examinations, cystoscopic examinations, and non-operative treatment in the dispensary is alternated with instruction in operating room technique, assisting in minor operations, and examination of ward patients before and after operation.

2 hours, 8th semester (SPALDING, SOMERS, GIBBONS)

5. Courses for Graduates will be arranged on application.

VII. DIVISION OF PATHOLOGY

WILLIAM OPHÜLS, Professor.
ERNEST CHARLES DICKSON, Assistant Professor.
EDGAR DALE DOWNING, Assistant.
GERTRUDE ANNIE DALY, Technical Assistant.

1. General Pathology.—A course of lectures, recitations, and demonstrations which, following a general introduction into the field of Pathology, covers the relations of the properties of living protoplasm and of the body cells to pathological conditions, heredity in disease, disturbances in circulation, regressive and progressive tissue changes, inflammation, and tumors.

5 hours a week, 4th semester (OPHÜLS, DICKSON)

2. **Pathological Histology.**—A laboratory course in which the student studies the microscopic lesions in pathological conditions of various organs with demonstration of gross specimens.

7½ hours a week, 4th semester (OPHÜLS, DICKSON)

3. **Special Pathology.**—A course of demonstrations of fresh and preserved, gross and microscopic specimens illustrating the most important chapters of Gross Morbid Anatomy. Part of the time will be devoted to the technique of postmortem examinations.

4 hours a week, 5th and 6th semesters (OPHÜLS, DICKSON)

4. **Advanced Work in Special Pathology.**—An elective course in Special Pathology is offered to students in the seventh and eighth semesters. Students taking this course will assist at necropsies on Saturday mornings and as often as possible at other times. The students are required to work up the histological or the bacteriological problems connected with the necropsies which they attend. For this work they will be given facilities in the laboratory. A deposit of $5 will be required to cover such material as is used by the students desiring to follow the course. Such part of this as is not drawn against will be refunded at the end of the course. At present attendance on this course will be limited to one semester. (OPHÜLS, DICKSON)

5. **Applied Bacteriology.**—An elective course in Applied Bacteriology will be offered to students in the seventh and eighth semesters. Students taking this course will receive instruction in the methods of bacteriological examination of blood, stools, urine, pus, etc., and in the performance of serum reactions. The students will be required to assist with, and whenever possible to perform, such minor operations as are required to obtain the material, and also to complete the examination of the specimens. Laboratory space and facilities for obtaining supplies will be given. A deposit of $5 will be required to cover the cost of such material as will be needed, of which such part as is not drawn against at the termination of the course will be refunded. At present attendance upon this course will be limited to one semester. (DICKSON)

6. **Research Work in Pathological Laboratory.**—Students wishing to do special work in the Pathological Laboratory should have finished courses 1 and 2. They should consult with the executive of the division in regard to the selection of a proper subject for investigation. Regular attendance is required. A deposit of $10 will be required to cover such material as is used by the student in

the course of his work. Such part of this as is not drawn against will be refunded at the end of the work. Work may be undertaken during the summer vacation. The same regulations apply to work on theses or for advanced degrees in the Division except that in the latter case the student also should have finished course 3.

(Ophüls, Dickson)

VIII. DIVISION OF PHARMACOLOGY

Albert Cornelius Crawford, Professor.

1. Pharmacology and Materia Medica.—In the course in Pharmacology emphasis is placed on laboratory work. At present this occupies three hours weekly during the first semester. In this course the student performs for himself, or has demonstrated to him by the other members of the class, not only the important experiments which illustrate the fundamental principles of pharmacology, but sees one or more experiments on all of the more important drugs. This serves to vitalize the work and render the details less burdensome. The relation of the laboratory work to rational therapeutics is constantly kept in mind. The lecture course embraces two hours weekly during the first semester, with one weekly conference and demonstration. During the second semester the work consists of lectures and recitations. It is essential that all students who take this course shall have finished at least one course in physiology and organic chemistry.

(Crawford)

2. Graduate Course.—The laboratory is open throughout the year to properly qualified students who wish to carry on independent work in pharmacology. (Crawford)

IX. DIVISION OF PHYSIOLOGY

Oliver Peebles Jenkins, Frank Mace McFarland, Porfessors.
Clara S. Stoltenberg, Associate Professor.
James Rollin Slonaker, Assistant Professor.
†Frank Walter Weymouth, Instructor.

1. Physiology of Muscle, Blood and Circulation.—An experimental course covering the ground represented in Foster's Physiology, Part I, or Howell's Text-book on the same subjects. (One lecture and five laboratory hours per week.) [Course 2 in the Department of Physiology and Histology.]

3 units, 1st semester (Jenkins, Slonaker)

†Absent on leave, 1912-13.

2. **Physiology of Digestion, Respiration, Elimination of Wastes, Metabolism, and Nutrition.**—Follows course 1. An experimental course, with Foster's Physiology, Part II, and Howell's Text-book, as texts. (One lecture and five laboratory hours per week.) [Course 3 in the Department of Physiology and Histology.]

3 units, 2d semester (JENKINS, SLONAKER)

3. **Structure of the Nervous System.**—The course consists of the dissection and comparative study of a series of vertebrate brains, including the human brain and cord, also the peripheral nervous system; abundant material is provided, also such necessary helps as the latest models and charts. For texts the student will use Quain, Edinger, and Barker. (One lecture and five laboratory hours per week.)

3 units, 2d semester (STOLTENBERG)

4. **Anatomy and Histology of the Sense Organs.**—The course is planned to accompany course 3, the two being designed to give the gross and minute anatomy of the central nervous systems and sense organs. The texts necessary for the student's use are Quain and Barker. (One lecture and five laboratory hours per week.)

3 units, 1st semester (STOLTENBERG)

5. **Histology.**—The study of the structure of the cell and its general phenomena, the fundamental tissues and the outline of their development in a comparative way, occupy the first semester. In the second, the microscopic anatomy of organs, except those of the nervous system and special senses [see courses 3 and 4], is dealt with. Elementary histological technique is taught during the course. (One lecture and six laboratory hours per week.) [Course 9 in the Department of Physiology and Histology.]

3 units, 1st and 2d semesters (MCFARLAND)

6. **Physiology of the Nervous System and Sense Organs.**—An experimental course in these subjects, designed to follow courses 3 and 4. Texts: Foster, Howell's Text-book. (One lecture and five laboratory hours per week.) [Course 6 in the Department of Physiology and Histology.] 3 units, 3d semester (JENKINS)

7. **Journal Club.**—Students in the advanced classes will be expected to meet once a week to discuss current literature in Physiology and Histology. [Course 15 in the Department of Physiology and Histology.]

1 unit, 3d semester (DEPARTMENT FACULTY)

8. The advanced or research courses in Physiology and Histology are open to those who are qualified to take them up. For details, see the University Register.

X. DIVISION OF SURGERY

Stanley Stillman (executive), Adolph Barkan (emeritus), Emmet Rixford, Professors.

Rufus Lee Rigdon, Albert Brown McKee, †Edward Cecil Sewall, Clinical Professors.

Harrington Bidwell Graham, Assistant Clinical Professor.

James Eaves, Instructor.

Sol Hyman, Leo Eloesser, Clinical Instructors.

John Robert Burrows, Arthur Lawrence Fisher, Frederick Mears Gedney, Aaron Samuel Green, Sylvan Lewis Haas, Clarence Elmer Hyde, Harvard Young McNaught, Howard Somers, Chester H. Woolsey, Walter Hoepfner Winterberg, Assistants in Clinic.

SUBDIVISIONS

OPHTHALMOLOGY GENITO-URINARY DISEASES
OTOLOGY, RHINOLOGY, AND LARYNGOLOGY

Instruction in Surgery begins in the fourth semester, with recitations and demonstrations in General Surgery, *i. e.*, the principles of surgery, surgical pathology, and the surgical diseases, together with recitations and demonstrations in fractures, dislocations, and deformities—subjects for which the student, having completed his anatomy, is properly prepared. The systematic text-book and lecture work in Regional Surgery is completed in the fifth and sixth semesters. The work of the seventh and eighth semesters is entirely clinical. The general field will be covered by means of clinics, practical demonstrations, bedside instruction, and work in the laboratory of Surgical Pathology.

1. Fractures, Dislocations, and Deformities.—Recitations, demonstrations, study of X-Ray plates, and experimental fractures and dislocations in the surgical laboratory.

2 hours, 4th semester (Rixford)

2. General Surgery (Surgical Pathology and Principles of Surgery)—Recitations, demonstrations, and laboratory work utilizing clinical and pathological material from the Dispensary and Lane Hospital, and preparations from the museum and laboratory of Surgical Pathology.

2½ hours, 4th semester (Stillman, Eaves)

3. **Regional Surgery.**—Recitations and discussions covering the entire field in preparation for clinical work of the 7th and 8th semesters.

3 hours, 5th and 6th semesters (Stillman, Rixford)

†Absent on leave, 1912-13.

4. Special Surgical Pathology.—Laboratory work, recitations, and demonstrations on tumors, the study of gross specimens, and work with the microscope, utilizing pathological material from the Dispensary and Hospital operating rooms.

4 hours, 5th and 6th semesters (EAVES)

5. Surgical Clinics and Section Work.—Formal class clinics and section work in the Dispensary and Surgical ward of Lane Hospital; history taking.

4 hours, 5th and 6th semesters (STILLMAN, EAVES)

6. Surgery.—Ward work and Clinics, Lane Hospital. The Senior class is divided into two sections. Section I is assigned to Lane Hospital for the mornings of the 7th semester, and Section II for the mornings of the 8th semester. Two hours per week will be devoted to operations and bedside study of hospital cases. There will be a clinical conference or a formal clinic Thursday mornings.

3 hours, 7th or 8th semesters (STILLMAN)

7. Surgery.—Ward work and Clinics, San Francisco Hospital. Section II of the Senior class is assigned to the San Francisco Hospital for the mornings of the 7th semester, and Section I for the mornings of the 8th semester. Three hours per week will be spent either in the wards or operating room and there will be a set Surgical Clinic each Saturday forenoon.

4 hours, 7th or 8th semesters (RIXFORD, ELOESSER)

8. Ophthalmology.—Demonstrations, recitations, and clinics. This course will cover in a practical way the general field of diseases of the eye. Instruction will be given in the use of the ophthalmoscope, perimeter, etc. 2 hours, 7th and 8th semesters (MCKEE)

9. Otology, Laryngology, and Rhinology.—Demonstrations, recitations, and clinics. The diseases of the ear, nose, and throat will be covered in a general way, and the practical use of the important diagnostic instruments will be taught.

2 hours, 7th and 8th semesters (GRAHAM)

10. Genito-Urinary Surgery.—Recitations, quizzes, and clinics. The course will include practical work in the Dispensary and training in the use of the urethroscope and cystoscope. Special attention will be devoted to the investigation of the upper urinary tract. Operative clinics will be held once per week. 3 hours, Section I, 7th semester; 3 hours, Section II, 8th semester. (RIGDON)

11. Orthopedic Surgery.—Clinics and demonstrations This course will cover the general field of orthopedic surgery. 2 hours, Section I, 7th semester; 2 hours, Section II, 8th semester. (RIXFORD)

12. Special Courses will be offered to well trained physicians in the laboratory of Surgical Pathology and in the Dispensary and Hospitals. Such students may register for advanced degrees or as Special Workers. Optional. (STILLMAN, RIXFORD)

13. Operative Surgery.—A course will be given in the 7th and 8th semesters on Operative Surgery on the cadaver and in the Pathological laboratory. Optional. (EAVES)

MARINE BIOLOGICAL LABORATORY

Professors CHARLES HENRY GILBERT and OLIVER PEEBLES JENKINS, Directors.

Professor FRANK MACE MCFARLAND, Instructor in Charge, 1912.

The Laboratory buildings are located at Pacific Grove, two miles west of Monterey, and stand on a low bluff immediately facing the sea. They consist of two two-story structures capable of accommodating about eighty students, and contain four general laboratories, one lecture-room, seventeen private rooms for special investigators, and a dark-room for photography. They are provided with aquaria, running water, and all necessary facilities for biological study. The library and apparatus of the University are available for use in the Laboratory.

SESSION OF 1912

The Twenty-first Session began Wednesday, May 31st, and extended over a period of six weeks, closing Tuesday, July 10th. The laboratory was under the general supervision of Professor MCFARLAND.

COURSES OF INSTRUCTION

1. General Zoology.—An elementary course open to all students and to teachers and others who desire an acquaintance with the anatomy and life-history of marine animals, and with the methods pursued in laboratory study. One lecture a day, the remainder of each day being spent in the laboratory or on the collecting grounds under the immediate direction of the instructor. This course is accepted by the Department of Medicine as satisfying the preliminary biological requirement for admission to the work of that department.

2. Zoology.—Open to students who have had course 1 in Zoology or Physiology, or an equivalent. The object of this course is primarily to enable students to gain a wide general knowledge of ma-

rine forms, and to this end special attention is devoted to collecting both along the shore at low tide and at the surface of the ocean. Material thus collected is studied in the laboratory, and in this work students are encouraged to consult the zoological literature. Occasional lectures.

3. General Embryology.—A laboratory course in the general principles of the development of Invertebrate and Vertebrate forms, supplemented by lectures and assigned reading, and including the histogenesis of the reproductive cells, the maturation, fertilization, and early cleavage of the egg, and the formation of the germ layers, larval stages, and the early development of one or more Vertebrates. Open to students who have had at least a year's work in Zoology or Physiology.

4. Research in Histology or Cytology.—Opportunity is given to a limited number of students, with suitable preparation, to take up original investigation in the above subjects under such guidance and advice as may be necessary. The work is planned to suit the inclinations and needs of the individual student. Arrangements for this work are made by personal consultation or correspondence before the beginning of the session.

Registration

The sessions of the Marine Biological Laboratory constitute an integral part of the biological work of Stanford University. Students register for this work at Pacific Grove at the beginning of the session, and receive upon its successful completion five units of University credit.

Expenses

A laboratory fee of *twenty-five dollars* is payable in advance. To investigators prepared to carry on original work, the use of the laboratory is tendered free of charge. Applicants for these privileges are expected to satisfy the directors as to their preparation for such work. Pacific Grove being a popular seaside resort, and the home of the Chautauqua Assembly and of numerous conventions, is well supplied with boarding accommodations with a considerable range in price, and also with cottages furnished for housekeeping. Students pay on an average about one dollar per day for room and board. Some small groups of students form clubs, rent cottages, and manage their own housekeeping, thus reducing their living expenses.

UNIVERSITY LIBRARY

GEORGE THOMAS CLARK, Librarian.
HELEN BINNIGER SUTLIFF, Chief Cataloguer.
ALICE NEWMAN HAYS, Reference Librarian.
CHARLES V. PARK, Chief of Loan Desk.
ELIZABETH HADDEN, Chief of Order Department.
LUCIA MAY BROOKS, Chief of Serial Department.

The Library is housed in the Thomas Welton Stanford Library Building, which forms the central portion of the easterly half of the outer quadrangle façade. On the main floor are the general reading rooms, with accommodations for 220 readers, the reference room, serial room, and catalogue room. On the second floor are six seminary rooms used exclusively by the Departments of Economics, English Literature, Germanic Languages, Greek, Latin, and History.

The Library is open during term time on week days from 8:00 a.m. to 10:00 p.m., except on Saturdays, when it is closed at 3:30 p.m.

During the short vacation the hours are from 8:00 a.m. to 4:00 p.m., Saturdays to 12:30 p.m., and during the long vacation, from 9:00 a.m. to 4:00 p.m., Saturdays 9:00 a.m. to 12:00 m. The shelves are open to members of the faculty, and to students engaged in advanced work upon the recommendation of their instructors. Books, other than works of reference, not required for class use, are lent for a period of two weeks.

Including the departments of Law and Medicine the Library contains upwards of 217,000 volumes, and the number is rapidly increasing. Noteworthy special collections are as follows:

THE JORDAN LIBRARY OF ZOOLOGY.—A collection consisting largely of works on ichthyology, to a considerable extent made up of a vast number of authors' separates, which have been accumulated by President Jordan, bound in convenient form, indexed and catalogued. The more voluminous publications, such as the works of Cuvier, Lacépède, Bloch, Bleeker, Gunther, and others, are well represented. These, supplemented by the proceedings of various societies and institutions, make a collection of books of great value to advanced students and investigators in ichthyology. The library is conveniently arranged, and is situated in the Zoology building near the laboratories and collections.

THE BARBARA JORDAN LIBRARY OF BIRDS.—A memorial collection presented by President Jordan, and to which frequent additions are made. While some of the older texts are not represented, it is a good working library of ornithology and contains the principal modern works on the subject.

THE HOPKINS RAILWAY LIBRARY.—A collection of approximately 10,000 volumes and pamphlets dealing with the subject of transportation. In 1892 Mr. Timothy Hopkins, of San Francisco, presented to the University his private library on railroads, consisting of about 2,000 books, personally providing for its maintenance and growth for many years. At present there is an annual library appropriation for this purpose. The collection is shelved by itself in one of the seminary rooms. It is general in scope, intended to embrace all subjects touching on the building, maintenance, and operation of railways. It is especially rich in state and government reports, as well as in reports of individual railroads both in the United States and Europe, with much material pertaining to their history.

THE HILDEBRAND LIBRARY.—In 1895 the University acquired the library of the late Professor Hildebrand, of Leipzig, containing more than 5,000 volumes and pamphlets relating largely to Germanic languages and literature, the seventeenth and eighteenth centuries being especially well represented, and including also a notable collection of three hundred old dictionaries. The value of the books is greatly enhanced by the manuscript notes of Professor Hildebrand.

THE THOMAS WELTON STANFORD AUSTRALASIAN LIBRARY.—A good working collection of books relating to Australia and New Zealand. It is especially rich in early voyages, travels, and descriptions. Several hundred volumes of parliamentary reports of the Australian states, the Commonwealth, and New Zealand, are included. The publications of learned societies, such as the Royal Societies of New South Wales and Victoria, the Australian Museum, and the New Zealand Institute, are well represented, while considerable pamphlet material also is available.

THE JARBOE COLLECTION ON THE FRENCH REVOLUTION.—Acquired in 1910. It contains original materials, principally in French, relating to the Revolutionary and Napoleonic era. Two features of the collection are of particular interest to advanced students of history —the original and contemporaneously printed pamphlets, of which

many are unusual; and the memoirs, of which there is a comprehensive selection.

The Lane Medical Library.—Founded by the directors of Cooper Medical College in accordance with the bequest of Mrs. L. C. Lane. The Library contains over 35,000 volumes, and is particularly rich in its collection of medical and allied periodicals. The leading domestic and foreign journals are currently received. The new library building, erected in 1912, is a fireproof structure of Colusa sandstone, and is located opposite the other medical buildings, on the corner of Sacramento and Webster streets, San Francisco.

Students may also have access to the Geological Library of Professor Branner, in room 333, Geology building. It contains over 30,000 books, pamphlets, and maps, relating chiefly to geology, mineralogy, paleontology, geography, exploration, metallurgy, and mining, including most of the state and government reports and the publications of scientific societies in all parts of the world. Particulars regarding the sets may be seen at the Reference Desk in the general library.

THE MEMORIAL CHURCH

The Rev. David Charles Gardner, Chaplain.
Godfrey Carl Buehrer, Organist.

Pending the restoration of the Memorial Church, the Sunday services of public worship are held in the lecture room commonly called the University Chapel. A daily service is held in the vestry of the Memorial Church at 8 a. m.

The following special preachers have been invited to occupy the chapel pulpit on alternate Sunday mornings during 1912-13.

Congregational

The Rev. H. Atkinson Jump, Oakland.
The Rev. D. F. Fox, Pasadena.
The Rev. W. I. McElveen, Evanston, Ill.
The Rev. William H. Day, Los Angeles.
President James Arnold Blaisdell, Pomona College.

Presbyterian

The Rev. Robert Freeman, Pasadena.
President John Willis Baer, Occidental College.
The Rev. Professor Henry Van Dyke, Princeton University.
The Rev. William Rader, San Francisco.

EPISCOPALIAN

The Rt. Rev. LOUIS CHILDS SANFORD, Fresno.

METHODIST

The Rev. CHARLES EDWARD LOCKE, Los Angeles.
The Rev. Bp. EDWIN HOLT HUGHES, San Francisco.

UNITARIAN

The Rev. WILLIAM SACHEUS MORGAN, Pacific Theological Seminary, Berkeley.
Dr. CHARLES ZEUBLIN, Chicago.

MUSIC

GODFREY CARL BUEHRER, Director.

1a. **Elementary Chorus.**—1 unit, 1st semester.
1b. **Advanced Chorus.**—1 unit, 1st semester.
1c. **Orchestra.**—1 unit, 1st semester.
2a. **Preparatory Theoretical Course.**—2 units, 1st semester.
2b. **Advanced Theoretical Course.**—2 units, 1st semester.
2c. **Counterpoint.**—1 unit, 1st semester.
3a. **Musical Theory.**—1 unit, 1st semester.

LECTURES, RECITALS, LITERARY CONTESTS, HONORS, AND CLUBS

University Assemblies

University Assemblies are held at intervals, averaging about once a fortnight, during the regular hours of instruction. All university classes are suspended during the Assembly hour. In addition to a number of Student Assemblies, the following speakers and subjects have been represented in 1912-13:

September 6, 1912.—Annual Addresses to the Entering Class: President Jordan, and Student Adviser Schaupp.

September 11.—Student Ideals and Problems: Mr. Herbert Clark Hoover, 95; Student Adviser Schaupp; President Ambrose and Treasurer Burbank, of the Associated Students; Miss Ileen Bullis, of the Women's Conference.

October 8.—Peace: Abd-ul Baha, Abbas Effendi, of Persia.

October 10.—The Balkan Crisis: Prince Lazarovich Hrebelianovich, of Servia.

November 15.—Political Corruption in America and Its Cure: Mr. Samuel Sidney McClure, New York.

November 22.—Planetary Politics: The Rev. Washington Gladden, Columbus, Ohio.

January 10, 1913.—Historical Pageantry and the Panama Exposition: Mr. Frederick R. Benson, London, England.

Feburary 11.—Democracy and Peace: President David Starr Jordan.

March 7.—Problems before the Chinese Republic: Dr. Ng Poon Chew, San Francisco.

Lectures

Presented by the University or under the auspices of various societies and clubs.

September 19.—Vocational Study: Dr. Meyer Bloomfield, Director of the Vocational Bureau, Boston.

September.—Nature and the Supernatural: Professor Arthur Cushman McGiffert, Union Theological Seminary.

October.—Latin-American Colonial History: Six lectures by Dr. Oliveira Lima, Brazilian Ambassador to Belgium.

October 1, December 5.—(1) The Writing of Plays, (2) Journalistic Training: Mr. John D. Barry, San Francisco.

October 31.—Intra and International Peace. Dr. Philip Van Ness Myers, Cincinnati, Ohio.

December 6.—The Botanical Aspects of the Deserts of Lybia and the Sudan: Dr. Daniel Trembly MacDougal, Director of Botanical Research in the Carnegie Institution, Washington, D. C.

December.—(1) Current Thought in America, (2) Bergson, Pragmatism, and Schopenhauer: Professor Guenther Jacoby, University of Greifswald, Germany.

January 31.—The Boy Scout Movement: Mr. S. A. Moffatt, Field Scout Commissioner of the Boy Scouts of America.

February 4.—A Bit of Elizabethan California: The Rev. Bp. William Ford Nichols, San Francisco.

February.—(1) William Vaughn Moody, (2) Whitman Once More, (3) Literary Longevity: Professor Gottfield Hult, University of North Dakota.

February 10.—Moving Picture Films of Living Microscopic Organisms: Dr. Dudley Tait, San Francisco.

March.—Judaco-Palestinian Literature (four lectures): Rabbi Martin A. Meyer, Temple Emanu-El, San Francisco.

Cosmopolitan Club

September 9.—Effect of the Civil War on the South: President Jordan, and Professor Krehbiel.

September.—Rome, the City Beautiful: Professor Henry Rushton Fairclough.

November 13.—Japan and America: Dr. Kinosuke Inui, Japan.

January 20.—A Visit to China: Professor Payson Jackson Treat

Classical Club

January 30.—Authors and Publishers in Old Rome: The Rev. Joseph M. Gleason, Palo Alto.

Archaeological Association

September 10.—The Science and Importance of Folk Lore: Professor Charles Hilltout, England.

September 19.—Some Results of Work with the Spade in Old Babylonia: Dr. John Peters, Rector of St. Michaels Church, New York.

Young Men's Christian Association

November 17.—China: Mr. James H. Wallace..

The Religion of A College Man: Three addresses by President David Starr Jordan.

Young Women's Christian Association

(1) Religion in the College Life, (2) Spiritual Life in a College Community: President David Starr Jordan.

(1) The Passing and the Permanent in Religion, (2) What Jesus did for Humanity (three addresses): The Rev. Albert W. Palmer, Oakland.

My Mission: The Rev. Bp. William Ford Nichols.

Three Fundamentals of Religion: The Rev. Lynn T. White, San Rafael.

The Unromantic Indian: Miss Weisst, Association Secretary, Haskell Indian Institute.

The Bright Side of Life: The Rev. William Rader, San Francisco.

Alaska: The Rev. Bp. J. P. Lowe, Alaska.

Constructive Criticism of the Juvenile Court: Mr. J. C. Astredo, Probation Officer, San Francisco Juvenile Court.

Economics

My Life in Prison: Mr. Donald Lowrie, San Francisco.

The Juvenile Court: Mr. J. C. Astredo, Probation officer of the Juvenile Court, San Francisco.

Russian Prisons from the Inside: Mr. Max Lippitt Larkin.

The Parole System: Mr. E. H. Whyte, State Parole Agent.

A Trip through Folsom Prison: Mr. J. Anton de Haas.

San Quentin Prison: Professor Ira B. Cross.

German Club

March 6.—Co-operation as a Factor in German Advancement: Mr. Stephen Ivan Miller, Jr.

Botany

February 18.—Huxley: Professor Vernon Lyman Kellogg.

March 4.—Humboldt: Professor James Perrin Smith.

March 18.—Linnaeus: Professor LeRoy Abrams.

Medical Department

October 21.—Acetonuria: Hofrat Carl von Noorden, Professor of Medicine in the University of Vienna.

Lane Medical Lectures

February 7.—Eugenics: President David Starr Jordan.

February 21.—The State and the Physician: Professor John Gerald Fitzgerald, University of California.

March 7.—Grafts and Transplantations of Human Tissue: Dr. Leo Eloesser.

March 21.—The Work of the Medical Department of the United States Army on the Firing Line: Capt. James L. Bevans, Medical Corps, U. S. Army.

April 4.—Some Skin Diseases We Need Not Have: Dr. Harry Everett Alderson.

April 18.—The Work and the Aims of Our Health Department: Dr. Richard G. Brodrick, Health Officer of San Francisco.

Musical and Dramatic Recitals

September 27.—Presentation of Oscar Wilde's *"An Ideal Husband,"* by the English Club.

October 18.—Presentation of *"Rambling Rameses,"* by The Ram's Head.

February 7.—Presentation of *"The Only Way,"* from Dickens' "Tale of Two Cities," by Sword and Sandals.

February 28.—Presentation of *"On The Quiet,"* by the Sophomore Class.

March 27.—Presentation of the Junior Opera, *"The Mojave Maid,"* by the Junior Class.

Peninsula Musical Association

October 17.—Song Recital, by Riccardo Martin.

December 5.—Song Recital, by Mme. Gerville Reache.

February 13.—Violin Recital, by Mischa Elman.

February 27.—Concert, by the San Francisco Symphony Orchestra.

Commencement Addresses—May 20, 1912

Possible Influences of the Panama Canal on our National Character: Professor David Prescott Barrows, University of California.

Making-over Society: President David Starr Jordan.

Annual Phi Beta Kappa Opening Meeting—May 19, 1912

The Address—An Ethical Aspect of the New Industrialism: Professor Alvin Saunders Johnson.

The Poem—Earth: Mr. Frank Walter Weymouth.

Founders' Day—March 9, 1913

The Address—Liberation, and the Real Meaning of Liberty: The Rev. Professor Henry Van Dyke, Princeton University.

The Raymond Fred West Memorial Lectures on Immortality, Human Conduct, and Human Destiny

"In memory of our beloved son, Raymond Fred West, a student in Leland Stanford Junior University, who was drowned in Eel River, California, on January 16, 1906, before the completion of his college

course, we wish to present to the trustees and authorities of the Leland Stanford Junior University, at Palo Alto, California, the honored Alma Mater of our son, the sum of ten thousand dollars, to be held as a fund in perpetual trust, for the establishment of a lectureship on a plan similar to the Dudleian Lectures and the Ingersoll Lectures at Harvard University.....

"It is our wish that such lectures shall not form part of the usual college or university course, nor shall they be delivered by any professor or instructor in active service in the institution. Such lecturer may be a clergyman or a layman, a member of any ecclesiastical organization, or of none, but he should be a man of the highest personal character and of superior intellectual endowment. He shall be chosen by the Faculty and the Board of Trustees of said University in such manner as the said Board of Trustees may determine, but the appointment in any case shall be made at least six months before the delivery of said lecture.....

"The course of lectures shall be known as the 'Raymond Fred West Memorial Lectures on Immortality, Human Conduct, and Human Destiny.' "

In accepting this gift from the donors, Mr. and Mrs. Fred West, of Seattle, Washington, and establishing the lectureship as provided in the terms of the gift, the University has adopted the following plan and regulations:

That these lectures be delivered on alternate years, the first in the year 1911; that the lecturer give at least three lectures; that these lectures be published in book form within not less than two years; that the lecturer have the option of publishing them himself, in which case the University will purchase a hundred copies, or of having the University publish them, in which case it will retain the copyright. In any case, the manuscript of the lecturer must be filed in the University archives;

That the honorarium given be decided in each case by the Board of Trustees, and that unless otherwise ordered the entire earnings of the West fund for the two years be devoted to honorariums and to the purpose of publication;

That the West Lecturer be each time nominated by the President, with the approval of the Advisory Board, and the consent and ratification of the Board of Trustees, as is the case with ordinary appointments.

The second series of the West lectures is to be given in April 1913, by the Rev. Samuel McChord Crothers, of Cambridge, Mass.

The Bonnheim Ethical Dissertations and Discussion

The purpose of the Bonnheim dissertations and discussion, as defined by the founder, Mr. Albert Bonnheim, of Sacramento, is as follows: "It is not so much desired to obtain new facts or new truths in ethics as it is to place the truth which we now have before as many students as possible, so that they will take greater interest in questions dealing with ethical problems." The competition is open to all undergraduate students of Stanford University, and is divided into two parts:

1. *The Bonnheim Dissertations.*—The general regulations governing the competition are as follows: Each competitor must deposit with the Registrar before a fixed date in January an essay upon the subject assigned by the committee. The essays must not be signed, but should have some mark of indentification and be accompanied by a sealed envelope containing the name of the author. They must be typewritten on thesis paper of regulation size. No limit of length is prescribed, but a treatment not to exceed ten thousand words is recommended. The subject announced is intended by the committee to be a general one. It is desirable that dissertations be limited to some particular phase of the general subject. The judges will announce the names of the four competitors who present the best Bonnheim dissertations, awarding them premiums of $50 each. But no award will be made to any essay not deemed worthy of recognition.

2. *The Bonnheim Discussion.*—The winners of the Bonnheim premiums for dissertations shall be qualified to engage in the discussion, which will be upon the same subject as the dissertations, and which will be held the first week in February. The Bonnheim prize of $50 will be awarded to the speaker who in his discussion of the subject shows the clearest insight and makes the most effective presentation. Each speaker will be allowed twenty minutes.

The general subject for 1912-13 was "Ethical Aspects of the Open Shop." The essays were received January 17, and the discussion took place February 7. The judges of the dissertations were Professor William Alpha Cooper, Dr. Orrin Leslie Elliott, and Mr. Stephen Ivan Miller, Jr.; of the discussion, Mr. VanWyck Brooks, Professor Ira Brown Cross, and Mr. William H. Kelly, of Palo Alto. Premiums were awarded to Albert Freeman Coyle, '15, Arthur Lockwood Johnson, '16, Edgar Clarence Smith, '13, and Eugene Earl Tincher, '13. The Bonnheim Prize was won by Arthur Lockwood Johnson, '16.

Intercollegiate Debate

An Intercollegiate Debate, under the auspices of the Associated Students of the University of California and of the Leland Stanford Junior University, is held in November of each year. In 1912-13 the debate was held at the University of California.

The question for 1912-13 was, "Resolved that the State of California should establish a series of endowed, non-partisan general newspapers." The contestants were: Victor Ford Collins, '13, Aubrey Wheeler Drury, '14, and Louis Earl Goodman, '13, of the University of California; and Albert Freeman Coyle, '15, Albert Harold Morosco, '16, and Patterson Dana Nowell, '13, of Stanford. The judges were Judge Frank Murasky, Mr. O. K. Cushing, and Mr. J. W. Lillienthal, of San Francisco. The debate was won by Stanford University.

Carnot Medal

The Carnot Medal, presented by the Baron de Coubertin, for the purpose of encouraging the study and discussion, in California, of French history and politics, is awarded annually to the student who, in the opinion of the judges, proves himself the best debater in a contest held for that purpose between Stanford University and the University of California.

Under the rules of the contest the general subject for discussion in 1912-13, "France and Republicanism," was made known in December, 1912. The contest occurs April 11, and the particular phase of the question to be discussed will be made known to the contestants two hours before the time set for the debate.

The Pacific Coast Debates

Debates with the Universities of Washington and Oregon are held under the auspices of the Pacific Coast Debating League, composed of Stanford University, the University of Oregon, and the University of Washington. Each institution is represented by two teams of two men each. The teams debate the affirmative and negative of the same question, which is chosen by the intercollegiate debating committees of the three institutions. The affirmative side of the question debates at home, while the negative side contests at one of the other universities.

The question for 1912-13 is "Resolved, that the immigration to the United States of all unskilled laborers of the Slavonic, Hellenic, and Italic races of Eastern and Southeastern Europe should be prohibited." The debates are set for March 28.

The Edward Berwick Junior Peace Prize

Under the auspices of the California Branch of the American Peace Society, an annual prize of fifty dollars, called the Edward Berwick Junior Peace Prize, is offered for competition by students of Stanford University. The award is made to that speaker, who in a public contest, delivers the address which in the opinion of the judges is the most effective in promoting the cause of international peace. A student who has once won the peace prize is not eligible to participate again in the contest. In 1912-13 the contest was held February 14. The contestants were Ichiji Miyata Akahoshi, '13, Albert Freeman Coyle, '15, Grant Holcomb, '11, and Patterson Dana Nowell, '13. The prize was awarded to Ichiji Miyata Akahoshi, '13.

Essays on Total Abstinence

A prize of fifty dollars is offered annually, under the auspices of the Woman's Christian Temperance Union, to Stanford students for the best essay on Total Abstinence from Alcoholic Liquors.

Essays in competition for this prize should contain not less than two thousand and not more than three thousand words, and should be sent to the Committee on Literary Contests on or before May 1st. The award will be made by a board of judges chosen jointly by officers of the Woman's Christian Temperance Union and the Faculty Committee on Literary Contests. No award will be made if no manuscript is deemed worthy of special recognition. The winning essay is eligible for competition for a national prize of one hundred dollars, awarded to the best manuscript of those which have already won a local award.

The Thomas Welton Stanford Fellowship in Psychic Research

From the "Psychic Fund," created by Mr. Thomas Welton Stanford, of Australia, the Trustees have established the Thomas Welton Stanford Fellowship for Research in Psychic Phenomena.

The Alumni Advisory Board Fellowship

The Advisory Board of the Alumni Association has provided for a Graduate Fellowship for 1912-13 of the value of one hundred and twenty dollars.

Memorial Scholarship

The Leland Stanford Junior Scholarship, established by Mrs. Stanford, in 1900, pays the necessary expenses of its holder throughout the undergraduate course. The present holder of the scholarship is Mr. William Francis Kilcline, of San Mateo, California.

The Alumni Jordan Scholarships

The Alumni Jordan Scholarship Fund has been founded largely by physicians who were at one time students of Stanford University. Its purpose is to pay the tuition fees of two or three medical students of high standing, with the understanding that at some future time the amount will be returned without interest. The student who once receives this scholarship loan will be entitled to its use throughout his medical course provided his work continues to be satisfactory.

The Bernard Scholarships in Entomology

Mrs. Matilda Bernard, widow of the late Henry M. Bernard of the University of Cambridge, England, has established two scholarships for 1912-13 and 1913-14. The purpose is to defray the expenses of a student who, under the direction of the Department of Entomology, shall devote his time to research work on the Chitinous Covering of Insects.

The Joseph Bonnheim Memorial Fund

April 5, 1897, Albert Bonnheim and wife, of Sacramento, California, founded the Joseph Bonnheim Memorial Fund, for the purpose of assisting worthy boys and girls to receive an education, "having in view such preparation and training, scholastic and otherwise, as will make the beneficiary self-sustaining by whatsoever trade, profession, or calling may seem best adapted for such purpose in each case." Applications for scholarships to be awarded in accordance with the provisions of this fund should be addressed to the Trustees, care of Albert Bonnheim, Secretary, Sacramento, California.

Harvard Club Scholarship

The Harvard Club of San Francisco maintains a scholarship for the purpose of aiding graduates of the University of California and of the Leland Stanford Junior University to pursue graduate work at Harvard University. Appointments to this scholarship, the present income of which is $500, are for one year only. Applicants should state, in writing, their college course and their purpose and plans for the future. These aplications should be in the hands of the Registrar on or before March 1st. The holder of the Scholarship for the year 1912-13 is Franklin Fowler Wolff, '11, of this University, studying Philosophy in the Graduate School.

The Rhodes Scholarships

Under the will of the late Cecil Rhodes two scholarships are assigned to each State and Territory in the United States. Each scholarship

has a yearly value of $1,500, and is tenable at any college in the University of Oxford for three successive academic years.

Candidates must be unmarried, must be citizens of the United States, and must be not younger than 19 nor older than 25 on October 1 of the year in which they are elected. All scholars shall have reached, before going into residence, at least the end of their sophomore year at some recognized degree-granting university or college. In accordance with the wish of Mr. Rhodes, the trustees desire that "in the election of a student to a scholarship, regard shall be had to (1) his literary and scholastic attainments, (2) his fondness for and success in manly outdoor sports, such as cricket, football, and the like, (3) his qualities of manhood, truth, courage, devotion to duty, sympathy for and protection of the weak, kindliness, unselfishness, and fellowship, and (4) his exhibition during school days of moral force of character, and of instincts to lead and to take an interest in his schoolmates."

Mr. Herbert Rowell Stolz, '11, is a present holder of one of the Rhodes Scholarships for California.

The Forum

The Forum, organized in 1909, is a Faculty Club for the unofficial discussion of academic questions. The following papers were presented in 1912-13.

September 13. The Improvement of Undergraduate Scholarship: Professor Oliver Martin Johnston.

October 18. The Elimination of the Junior College: Professor Ellwood Patterson Cubberley and Professor Fernando Sanford.

November 18. The Honor System in Scholarship: Professor Jefferson Elmore.

December 13. The Spirit of Liberal Education: Professor Benjamin Oliver Foster.

January 31. Religion in the University: Rev. David Charles Gardner.

March 1. Sex Hygiene in the Public Schools: Professor Charles Edward Rugh, University of California.

Philological Association

Associate Professor Oliver Martin Johnston, President.
Assistant Professor Henry David Gray, Secretary.

The University Philological Association was organized September 17, 1892, for the purpose of reading and discussing results of scientific investigations in language and literature. The membership consists of the instructors and advanced students in the different language depart-

ments in the University. The regular time of meeting is the first Thursday of each academic month, excepting September, January, and May, at 8:00 p.m. The following papers were presented during the calendar year ending April, 1913:

April 18, 1912.—(1) The Influence of the Classics upon Whittier: Professor Augustus Taber Murray; (2) The Evolution of Shakespeare's Heroine: Assistant Professor Henry David Gray.

October 3.—The Allegory in Lyly's Endymion: Assistant Professor Gray.

November 7.—Lydian and Indo-European Language: Professor George Hempl.

December 9.—Judas Maccabeus: Professor Israel Abrahams, Cambridge University, England.

February 6, 1913.—Whitman Once More: Professor Gottfried Hult, University of North Dakota.

March 6.—(1) The Religious Attitudes of Barbay d' Aurevilly: Assistant Professor Albert Léon Guérard; (2) Chaucer Notes: Professor Ewald Flügel.

Science Association

Professor Fernando Sanford, President.
Assistant Professor Isabel McCracken, Secretary.

The Science Association was organized January 17, 1894. Original investigations and papers of general interest on scientific topics are presented from time to time.

The following papers were read before the Association between April, 1912, and April, 1913:

The Projection Method and Visual Images: Professor Lillien J. Martin.

The Mistletoe in California: Professor Emile P. Meinecke.

The Life Work of Dr. Nettie Stevens: Professor Frank Mace McFarland.

Ecto-Parasites and Their Distribution: Professor Vernon Lyman Kellogg.

The California Redwood Park: Professor Charles Benjamin Wing.

Radiation Pressure: Dr. Perley Ason Ross.

Electrical Properties of Small Particles in Liquid Media: Professor Stewart Woodford Young.

LELAND STANFORD JUNIOR MUSEUM

Harry C. Peterson, Curator.
James Scott Topham, Assistant Curator.
P. J. White, Fred Ellsaesser, Stanley Ross, G. Ito, Assistants.

In 1880, Leland Stanford, Junior, then eleven years of age, accompanied his parents on a trip through Europe, and collected numerous mementoes of the places visited. In 1883, on a second trip, he began to pursue this object more ambitiously, and finally with the idea of establishing a museum. The Leland Stanford Junior Museum was designed by Mrs. Stanford as a memorial to perpetuate this idea, and the various collections are mainly her gift to the Museum.

The collection made by Leland Stanford, Junior, between 1880 and 1884, has been placed in two rooms (A and B), and in room A his own arrangement is reproduced in detail. In the room adjoining (B) are found mementoes of his early life. These two rooms contain especially Egyptian bronzes, Tanagra figurines, Greek and Roman glass, armor, mosaics, Sèvres and Dresden ware, and the like.

The Memorial Room (O) was designed to contain personal mementoes of Senator and Mrs. Stanford. The collection includes ancestral portraits of the Stanford and Lathrop families; two cases devoted to the Grant family collection; racing trophies; Muybridge's first photographs of "Animals in Motion," and subsequent works; the "Last Spike," and other historic relics of the Central Pacific Railroad; a large assortment of Point, Alençon, Chantilly, Duchesse, Honiton, Valenciennes, and other laces; India shawls, fans, Worth dresses, antique jewelry, and European souvenirs.

The vestibule and upper corridor are devoted principally to statuary, old and rare books, papers, etc., including Duc de Loubat's reproductions of Aztec and Mexican manuscripts, a 16th century illuminated Turkish Koran, Lord Kingsborough's "Antiquities of Mexico," and German engravings.

The Di Cesnola Collection (rooms C and E) contains five thousand pieces of Creek and Roman pottery and glass from the Island of Cyprus.

Room F contains a collection of Venetian glassware and chandeliers, mirrors, and mosaic art pieces, the gift of Messrs. Salviati & Camerino, of Venice, Italy. Iridescent glass, Etruscan vases, Roman lamps, sculptured marble heads, and bas-reliefs of the first century were added by Mrs. Stanford.

The American collection (I) is made up of mound relics, Indian baskets, Acoma ware, utensils, Alaska canoes, totem poles, etc. In

this room is also a display of material of the stone age purchased by Mrs. Stanford in Denmark, as well as a collection of Samoan relics and war implements, given by President Jordan. The center case in this room contains practically all the implements extant of the old Mission Dolores, presented by Don Pablo Vasquez, whose father was the last major-domo of the Mission.

In the Chinese and Japanese room (K) there is a collection of bronzes, arms, china, lacquer, cabinets, musical instruments, rich embroideries, and specimens of wood-carving, including the Imperial bedroom set, a marvel in wood-carving and inlaid work.

The Japanese collection, purchased by Mrs. Stanford in 1902, consists of cloisonne, Satsuma, porcelain, embroideries, Buddhistic images, and ivory carvings. The large bronze Koro, over 300 years old, is especially noteworthy. The Corean collection, the gift of Mr. Timothy Hopkins, contains costumes, household goods, cabinets, screens, etc. Mr. Hopkins has also placed in the Museum a collection of ancient and modern coins and medals (Room F).

The Fine Arts Collections (rooms P, Q, R, U, and V) include pictures by Messonier, Bouvier, Bonnat, Richter, Carolus-Duran, Van Wyck, Bierstadt, Ch. Landelle, Courtois, Piot, Munier, Brozik, Ricci, Humphrey Moore, Porteilje, Bradford E. Paoletti, Mazzoni, Keith, Hill, Charles Nahl, C. T. Wilson, and many others.

A recent collection of eighty-five oil paintings, presented by Mr. Thomas Welton Stanford of Melbourne, Australia, include rare canvasses and panels from such artists as Minderhout Hobbema, James Giles, R. S. A., John Frederick Herring, Lienur, Van der Houten, Francis Snyders, W. J. Laidley, David Bates, John Yarley, Juliun M. Price, J. W. Ready, William Melby, James E. Meadows, Elijah Walton, F. G. S.; W. Henry; W. Koek-Koek, E. Wake Cook, T. R. Miles, Sr., John Glover, Herr Schnars-Alquist, Louis Buvelot, William Hart, William Shiels, R. S. A., S. Bird, Patrick Nasmyth, Emil Bayard, Gerard Lairesse, C. Wimmer, Salvator Rosa, G. Koken, John Weenix, Bachman, Kobell, Jr., Charles Stuart, Heinrich Rasch, Melchoir Hondecooter, Marie Angelica Kaufman, Ten Kate, George Earl, Guardabassi, and E. G. Lewis. The collection is in Room U. A collection, previously presented by Mr. Stanford, includes a group of sixty oil paintings of Australian scenes, the work of I. W. Curtis, of Australia. Many of these are now hung in Room Q.

Room V contains the Anna Lathrop Hewes collection of paintings, statuary, mosaic, etc. Ceramics collected by Mrs. Stanford include

Sèvres, Dresden, Royal Berlin, Persian, Pompador crystal, Bohemian, and numerous other wares.

Through the courtesy of Wells, Fargo & Co., all gifts intended for the Museum will be transported free of charge over their lines, in shipments of fifty pounds or less, from railroad points in California, Oregon, and Nevada, if addressed to The Curator, Leland Stanford Junior Museum, Stanford University, California.

Pending the complete restoration of the Museum building, a temporary installation of exhibits has been made in the main portion.

Museum hours: 10:00 a.m. to 5:00 p.m. except Sundays and holidays.

DEGREES CONFERRED

*September 8, 1911; †January 12, 1912; May 20, 1912

BACHELOR OF ARTS

GREEK

†Josephine Veronica MacCormac

LATIN

Flora Anne Bagley
†Ruth Beard
Eunice Case
†Carol J. Dunlap
*Gladys Amiel Peck
Bertha Wilhelmina Sieber
†Malcolm Leland Yeary

GERMANIC LANGUAGES

Irene Frances Burnside
†Catharine Morris Cox
Edith Goebel Engelhard
†Bertha Louise I. Hook
Louise Marcus
*Robert Walcott Messer
Faye Ruth Miller
Gertrude Anne Miller
Lilian Frances Rivers
Ada Robinson
Clara Lydia Schaaf
Norbert Scheele
†Josephine Wilmarth Sheldon
†Felita Mary Smith
Bertha Frances Van Zwalenburg
†Elsie Louise Whittemore

ROMANIC LANGUAGES

Roberta Haslett
Julia Eugenia Moore
Mary Alada Newkirk
Lynda Louise Strickler
Jere Turpin
May Vertrees

ENGLISH

Ethel Louise Baxter
Frederick Harold Beach
Harry Hammond Beall
Leslie Blanchard
†Luther Musson Boyers
†Margaret Louise Boyle
Grace Burke
Ethel Lee Crosby
Jessica Don-Carlos
†Elizabeth Edwina Ford
Katherine Prewitt Graham
Clarence Bray Hammond
†Harriet Hayes
Frances Morey Hoyt
Evelyn Clara Hulsman
Lawrence Burch Jackson
Mary Louise McCarthy
Ora Martina McDermott

Hamilton Murray
†Ethel Mary Ross
†Ruth Adele Sampson
Olive White Shellenberger
*Ruth Adair Smart
Gertrude Dardier Workman
†Sarah Irene Young

PHILOSOPHY

Ruth Edith Shaw

PSYCHOLOGY

Alma Holmes

EDUCATION

John Siegfried Bolin
Otha Harrison Close
Emma Gladys Gill
*Ira Dawson Payne
William Thomas Root, Jr.
Brooxie Cartwright Stewart
†Paul Eve Stewart
William Roy Tanner
Susan Maude Toy
Guy Vernellen Whaley

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Physiology and Histology: Oliver Peebles Jenkins. (482.)

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The superior number [1] indicates first semester; [2] indicates second semester.

†Abrams, Leroy, Associate Professor of Botany, (465, TTh 11:15) — Local 127, 23 Salvatierra

†Adams, Ephraim Douglass, Professor of History, — New Haven, Conn.]

Addis, Thomas, Assistant Professor of Medicine, — SF West 8385, 2318 Clay, SF-sf

†Alderson, Harry Everett, Clinical Associate Professor of Medicine, (240 Stockton St., 2:30-4:30) — 240 Stockton, SF-sf

Allan, Evelyn Wight, Dean of Women, (203, MWF 9:15, T Roble 6:30-8, Th 31 Salvatierra 3-6) — Local 56, 31 Salvatierra

[Allardice, Robert Edgar, Professor of Mathematics — In Europe]

†Allen, Clifford Gilmore, Assistant Professor of Romanic Languages, (242, MWF 9:15, TTh 11:15) — Local 58, 9 Alvarado

†Anderson, Melville Best, Professor of English Literature, Emeritus, — In Italy

†Angell, Frank, Professor of Psychology, (399, TTh 2-3) — PA 87, 1200 Bryant

[†Barkan, Adolph, Professor of Structure and Diseases of Eye, Ear, and Larynx, Emeritus, — 135 Stockton, SF-sf]

[†Bassett, Lee Emerson, Assistant Professor of English, — Seattle, Wash.]

Beckwith, Henry Truman, Acting Instructor in Mining, — Local 26, 24 Lasuen

†Bentley, Rufus Clarence, Associate Professor of Education, (52) — Local 61, 12 Alvarado

BERGER, ALICE RUTH, Acting Instructor in Chemistry, (24, 2-4:30) — Local 116R1, 73 No. 6th, SJ-sj

†BINGHAM, JOSEPH WALTER, Professor of Law, (4, MWTh 11:15-12) — PA 754K, 1001 Cowper-p

†BLAISDELL, FRANK ELLSWORTH, Assistant Professor of Applied Anatomy, — SF Pacific 3482, 1520 Lake, SF-sf

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BOARDMAN, WALTER WHITNEY, Clinical Instructor in Medicine, (Lane Hosp., 9-4) — West 6193, Lane Hospital, SF-sf

[BOEZINGER, BRUNO, Assistant Professor of German, — In Europe]

BOEZINGER, LYDIA MARIE, Assistant to Registrar, (119, 8:15-12:15, 1:30-4:30) — PA 196, 176 Bryant-p

†BOHART, GEORGE SHAMBAUGH, Instructor in Chemistry, (28, 1:30-3-30) — 856 Middlefield-p

†BRANNER, JOHN CASPER, Vice-President and Professor of Geology, (332, 8-12, 2-5) — Local 10, 13 Alvarado

[†BRIGGS, WILLIAM DINSMORE, Assistant Professor of English, — In Europe]

BRISTOL, SUSAN BROWN, Appointment Secretary, (118, 9-12, 1:30-4:30, S 9-12) — PA 709X, 1155 Ramona

²BRODRICK, RICHARD G., Assistant Clinical Professor of Hygeine and Public Health, — 1211 Polk, SF-sf

BROOKS, LUCIA MAY, Chief of Serial Department, Library, — Local 25, 1 Salvatierra

†BROOKS, VAN WYCK, Instructor in English (207B, TTh 9:15-10-15) — PA 330L, 505 Embarcadero-p

²BROWN, FLOYD CROMWELL, Acting Instructor in Civil Engineering, (269, TTh 9:15-10:15, 11:15-12:15) — Encina

†BROWN, JOSEPH GRANT, Assistant Professor of Physics, (385) — PA 267, 1013 Ramona-p

BUCKINGHAM, ELISABETH LEE, Acting Instructor in English, (211, M 1:30-3:30) — PA 404K, 609 Kingsley-p

BUEHRER, GODFREY CARL, Organist, (84 and 68) — Local 130, 11 Alvarado

†BURLINGAME, LEONAS LANCELOT, Assistant Professor of Botany, (469) — Local 144, 20 Alvarado

²CAMPBELL, CLARENCE P., Instructor in Mechanical Engineering, (260, 9:15-12:15, 1:30-4:30) — Encina

[CAMPBELL, DOUGLAS HOUGHTON, Professor of Botany, — In Europe]

†Cannon, Henry Lewin, Associate Professor of History, Local 46
(230, 9:15) 19 Alvarado
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(7, TTh 11:15-12:15) 1001 Ramona-p
²Charles, Samuel Watson, Lecturer in Law, PA 417L
251 Lincoln-p
[*†Charters, Samuel Barclay, Jr., Assistant Professor of Electrical Engineering, Pittsburg, Pa.]
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(91, 8-12, 3-5) 7 Alvarado
†Clark, George Thomas, Librarian, PA 1440-R3
(Library, 8:30-12:30, 1:30-4:30) Menlo Heights
†Clark, James Cameron, Acting Assistant Professor
of Electrical Engineering, (507, TWThF 2:30-4:30) 225 Addison-p
†Clark, William Redwood Price, Clinical Instructor
in Medicine, (240 Stockton St., 11-1) 240 Stockton,SF-sf
Cleveland, Maude, Instructor in Roble Gymnasium, Local 14
(Roble Gymnasium, 9-12, 3-6) 15 Lasuen
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Metallurgy, (560, 2-4) 381 Hawthorne-p
†Congdon, Edgar Davidson, Instructor in Anatomy, PA 438X
(Museum 10, 8-11) 219 Addison-p
†Cooper, William Alpha, Associate Professor of German, Local 66
(35, 11:15) 35 Salvatierra
†Coover, John Edgar, Fellow in Psychic Phenomena, PA 348K
(418, TTh 9:15) 157 Bryant
Cox, Anna Shipley, Instructor in Latin and Greek,
(22, 12:15) 855 Chapman, SJ-sj
†Crawford, Albert Cornelius, Professor of Pharmacology,
(Museum, 8:15-12:15) 523 Webster
†Cross, Charles Norman, Assistant Professor of PA 525K
Mechanical Engineering, (504, 1:30-4:30) 340 Embarcadero-p
†Cross, Ira Brown, Assistant Professor of Economics, PA 569X
(219, MWF 10:15-11:15) 364 Kingsley-p
† Cubberley, Ellwood Patterson, Professor of Education, Local 19
(51, TTh 11:15-11:25, W 12:15, 3-3:30) 12 Cabrillo

*Died, December 29, 1912.

†Cutter, Lawrence Edminster, Instructor in Mechanical Engineering, (274, MT 1:30-4:30, TTh 8:15-12:15) 627 Webster-p

†Dailey, Morris Elmer, Lecturer in Education, San Jose 237 San Jose-sj

†Davidson, Percy Erwin, Associate Professor of Education, (53, TTh 11:15) PA 1442R1 University Park

Dickson, Ernest Charles, Assistant Professor of Pathology, (Lane Hospital) SF West 6193 Sacramento and Webster, SF-sf

†Doane, Rennie Wilbur, Assistant Professor of Entomology, (434, 1:30-4:30) 527 Homer-p

†Drew, Elmer Reginald, Assistant Professor of Physics, (384, MWF 9:30-10:00) PA 362 1321 Waverley-p

†Durand, William Frederick, Professor of Mechanical Engineering, (260, MTWTh 11-12) Local 76 2 San Juan

Eaves, James, Instructor in Surgery, Lane Hospital, SF-sf

†Eckart, William Rankine, Professor of Mechanical Engineering, (503, 1:30-4:30) PA 231K 1445 Bryant-p

†Elliott, Orrin Leslie, Registrar, (117, 9-12, 2-4:30, S 9-12) Local 45 5 Cabrillo

†Elmore, Jefferson, Associate Professor of Latin, (22, MWF 9:15-10:15) PA 251 1134 Emerson-p

Eloesser, Leo, Clinical Instructor in Surgery, (739 Butler Bldg., 2-4) 135 Stockton, SF-sf

†Espinosa, Aurelio Macedonio, Assistant Professor of Romanic Languages, (245, Th 11:30-12) 543 Middlefield

†Fairclough, Henry Rushton, Professor of Latin, (22, MWF 9:15-9:30) Local 52 6 Alvarado

†Fish, John Charles Lounsbury, Professor of Railroad Engineering, (269, TTh 10:15) PA 308 1101 Emerson

Fisher, Walter Kenrick, Assistant Professor of Zoology, (441, 1:30-4:30) 1525 Waverley-p

Fleischner, Emanuel Charles, Clinical Instructor in Medicine, (350 Post, 2-4) SF Douglas 2222 350 Post, SF-sf

†Flügel, Ewald, Professor of English Philology, (212, MTTh 1:30) PA 568K 1153 Cowper

†Folsom, David Morrill, Associate Professor of Mining, (337, 11:15-12, 2-4) PA 429 320 Embarcadero-p

[†Foss, John Harrison, Assistant Professor of Civil Engineering, In Hawaii]

†Foster, Benjamin Oliver, Associate Professor of Latin, (22, TTh 10:15) 3 Salvatierra

[†Franklin, Edward Curtis, Professor of Chemistry, Washington, D. C.]

†Gardner, David Charles, Chaplain, (84, TWThF 9-12) Local 68 1a Alvarado

†Gibbons, Henry Walter, Clinical Instructor in Gynecology and Obstetrics, (350 Post St., 3-5) 5850 California, SF-sf

†Gibbons, Morton Raymond, Clinical Instructor in Medicine, (350 Post St., 1-3) 3979 Washington, SF-sf

†Gilbert, Charles Henry, Professor of Zoology, (433, TTh 1:30-2:30) PA 258 433 Melville

Graham, Harrington B., Assistant Clinical Professor of Surgery, (209 Post St., 9-1) 209 Post, SF-sf

†Grass, Donald Frederick, Instructor in Economics, (221, TTh 10:15-11:15) PA 518X 170 Waverley-p

†Gray, Henry David, Assistant Professor of English, (209, MW 10:15) Local 36 19 Salvatierra

†Green, Rufus Lot, Professor of Mathematics, (71, MWF 9:15-10:15, TTh 10:15-11:15) Local 108 13 Salvatierra

†Griffin, James Owen, Professor of German, (35, 10:15-10:30) Local 54 14 Alvarado

†Guérard, Albert Léon, Assistant Professor of Romanic Languages, (245 TTh 9:15) 37 Salvatierra

Hadden, Elizabeth, Chief of Order Department, Library, PA 434L 1157 Ramona-p

Hall, Anna Gertrude, Cataloguer, Library, 603 Waverley-p

†Hall, Howard Judson, Assistant Professor of English, (206, MW 9:15, TTh 10:15) 209 Addison-p

†Harcourt, Robert Henry, Instructor in Mechanical Engineering, (Forge, 8:15-12:15, 1:30-4:30) 559 Everett-p

†Harshe, Robert Bartholow, Assistant Professor of Graphic Art, (314, MF 3-4) 7 Salvatierra

Hays, Alice Newman, Reference Librarian, Local 57 3 Alvarado

†Heath, Harold, Professor of Zoology, (436, MTThF 1:30-4) PA 557L 1147 Ramona-p

†Hempl, George, Professor of Germanic Philology, (32, MWF 9:15, Th 2:30) Local 101 8 Cabrillo

[Hill, Harold Phillips, Associate Clinical Professor of Medicine, (177 Post St., 2-4) 177 Post, SF-sf

†Hilmer, Hermann Johann, Assistant Professor of German, (35, M 11:15) PA 815K 151 Cowper-p

†Hirschfelder, Joseph Oakland, Professor of Clinical Medicine, Emeritus, (275 Post, S. F., 2-5) 1392 Geary, SF-sf

Hohfeld, Wesley Newcomb, Professor of Law, (7, TTh 10:15-10:45) 627 Forest-p

†Hoisholt, Andrew William, Clinical Professor of Psychiatry, State Hospital, Stockton-s

Hollmann, Emil Frederic, Assistant Academic Secretary, (112, 8-12; 1:30-5) 56 Encina

†Hoskins, Leander Miller, Professor of Applied Mathematics, (275, 11:30-12) PA 75 365 Lincoln-p

†Howard, Burt Estes, Professor of Political Science, (223, MWF 11:15) Local 41 12 Dolores

[†Huston, Charles Andrews, Professor of Law, Cambridge, Mass.]

[1]†Hyman, Sol., Clinical Instructor in Surgery, (723 Butler Bldg., 2-4) 135 Stockton, SF-sf

James, Frances Sophia, Librarian Lane Med. Lib., Park 2197, SF 731 Buena Vista, SF-sf

†Jenkins, Oliver Peebles, Professor of Physiology and Histology, (482) Local 40 3 Lasuen

†Johnston, Oliver Martin, Associate Professor of Romanic Languages, (242, MWF 9:15, M 2:30) Local 103 4 Alvarado

†Jordan, David Starr, President, (111, 11-12, 2-3) Local 1 Xazmin Hs., Serra Ave.

Keller, Lena Marguerite, Cataloguer, Library, 233 Addison-p

†Kellogg, Vernon Lyman, Professor of Entomology, (431, 11-12) PA 678 1057 Ramona

†Kirkwood, Marion Rice, Assistant Professor of Law, (6, MTWTh 1:30-2) 1325 Bryant-p

[Knowlton, Phillip Arnold, Instructor in Latin, Fairbanks, Alaska]

†Krehbiel, Edward Benjamin, Professor of History, (230, 11:15) Local 129 29 Salvatierra

Larkin, Max Lippitt, Instructor in Economics, (220, MWF 9:15-10:15) Palo Alto Hotel-p

†Lenox, Lionel Remond, Professor of Analytical Chemistry, (40, 2-4) Main 471 Mountain View

†Lesley, Everett Parker, Assistant Professor of Mechanical Engineering, (266, 9:15) PA 293 451 Channing

†Liggett, James Bennett, Instructor in Foundry Practice, (540, 8:15-12:15, 1:30-4:30, S 8:15-9:15) PA 533L 445 Forest-p

†Long, Royce Reed, Assistant Professor of Physical Training, (Encina Gym., MWF 11:15, 5-6; TTh 5-6) Local 109 11Salvatierra

LUNDGREN, E. LEONARD, Instructor in Applied Mathematics, (45, 9:15-10:15, MWF 10:15-11:15) — PA 728X, 262 Kingsley

[2]McCLAIN, EMLIN, Acting Professor of Law, (2, 9:15-10:15, 11:15-12:15) — 653 Melville-p

McCRACKEN, MARY ISABEL, Assistant Professor of Entomology, (433, 8:30-12:15) — 5 Salvatierra

†McDOWELL, JOHN EZRA, Assistant Registrar, (120, 8:15-12:15, 1:30-4:30) — Local 44, 10 Cabrillo

†McFARLAND, FRANK MACE, Professor of Histology, (480, TTh 9:15-12:15, MTW 1:30-4:30) — 943 Scott-p

†McKEE, ALBERT BROWN, Clinical Professor of Surgery, (Union Square Bldg., 10-1) — 350 Post, SF-sf

[†McMURPHY, JAMES IRA WILSON, Instructor in Systematic Botany, — Madison, Wis.]

†MANNING, WILLIAM ALBERT, Assistant Professor of Applied Mathematics, (70, WF 11:15) — PA 689L, 604 Tennyson

†MARTIN, ERNEST WHITNEY, Associate Professor of Greek, (25, TTh 11:15) — PA 132, 525 Lincoln-p

MARTIN, LILLIEN JANE, Professor of Psychology, (401, TTh 4:15) — 15 Salvatierra

†MARTIN, PERCY ALVIN, Assistant Professor of European History, (235, T 2-2:30, F 10:15-10:30) — PA782X, 1048 Ramona

†MARX, CHARLES DAVID, Professor of Civil Engineering, (271, 8:15-9:15) — PA 255, 357 Kingsley

†MARX, GUIDO HUGO, Professor of Mechanical Engineering, (274, 9:15-10:15) — PA 715, 356 Lincoln

[1]MEINECKE, EMILE P., Acting Professor of Plant Pathology, (468, ThF 2-4) — University Club, SF-sf

†MEYER, ARTHUR WILLIAM, Professor of Anatomy, (Museum, MWF 11-11:30) — PA 413K, 1116 Ramona-p

†MILLER, STEPHAN IVAN, JR., Instructor in Economics, (221, 8:45-9:15) — PA 254, 628 Webster

MIRRIELEES, EDITH RONALD, Instructor in English, (209a, 12:15) — PA 454X, 375 Little Kingsley

†MITCHELL, JOHN PEARCE, Assistant Professor of Chemistry, (10c, 2-4) — PA 722, 235 Embarcadero

MORENO, HALCOTT CADWALDER, Associate Professor of Applied Mathematics, (45, MTWF 11:15) — Local 31, 22 Alvarado

†MOSER, CHARLES, Instructor in Civil Engineering, (500, MWF 10:15) — PA 690X, 651 Homer-p

MOSHER, CLELIA DUEL, Medical Adviser to Women and Director of Roble Gymnasium, (94, 1-2) — PA 23, 1094 Emerson

†MURRAY, AUGUSTUS TABER, Professor of Greek, (25, TTh 9:15-10) — PA 481Y, 1019 Bryant

[†NEWCOMER, ALPHONSO GERALD, Professor of English, — In Europe]

NIELSON, AXEL, Instructor in Electrical Engineering, (506, 9:30-12) — PA 558L, 251 Emerson-p

†OPHÜLS, WILLIAM, Professor of Pathology, — SF West 6801, 114 Walnut, SF-sf

†PALMATEER, THERON J., Instructor in Machine Shop, (8:15-4:30) — Mayfield-m

PARK, CHARLES V., Chief of Loan Desk, Library, — Encina

PEIRCE, GEORGE JAMES, Professor of Botany and Plant Physiology, (466, W 2:30) — PA 436X, 281 Embarcadero

PELLISSIER, ROBERT EDOUARD, Instructor in French, (245, TTh 8:15-9:15) — Local 46, 19 Alvarado

†PONZER, ERNEST WILLIAM, Assistant Professor of Applied Mathematics, (40, 11:15-11:45) — PA 174, 939 Cowper-p

†PORTER, LANGLEY, Clinical Professor of Medicine, (240 Stockton St., 2-5) — SF, Douglass 3400, 240 Stockton, SF-sf

†PRICE, GEORGE CLINTON, Professor of Zoology, (446) — Local 53, 5 Alvarado

†RENDTORFF, KARL GUSTAV, Associate Professor of German, (32, TTh 9:15-10:15) — PA 449Y, 318 Lincoln-p

†RIGDON, RUFUS LEE, Clinical Professor of Surgery, (291 Geary St., 1-4) — 291 Geary, SF-sf

†RIXFORD, EMMET, Professor of Surgery, (1795 California, 1-3) — SF Franklin 5100, 1795 California, SF-sf

†ROBINSON, EDGAR EUGENE, Assistant Professor of American History, (230, MWF 11:15-11:45) — PA 530X, 1080 Emerson-p

†ROGERS, AUSTIN FLINT, Associate Professor of Mineralogy, (362, 10:15) — PA652Y, 1047 Ramona-p

†ROGERS, FREDERICK JOHN, Associate Professor of Physics, (381) — Local 34, 4 Lasuen

†ROSS, PERLEY ASON, Instructor in Physics, (386, 1:30-4:30) — 209 Hanover, College Terrace

RUSSELL, THERESA PEET, Instructor in English, (206, MW 11:15-12:15) — PA 404K, 609 Kingsley-p

†RYAN, HARRIS JOSEPH, Professor of Electrical Engineering, (505, TWThF 11:15-12:15) — Local 75, 3 Santa Ynez

†Sabine, George Holland, Assistant Professor of Philosophy, (417, M 10:15-11:15, T 9:15-10) — Local 55, 9 Salvatierra

†Sanford, Fernando, Professor of Physics, (390) — PA 646, 450 Kingsley

†Schaller, Walter Frank, Clinical Instructor in Medicine, (City of Paris Bldg., MWF 2-5) — 150 24th Ave., SF-sf

Schaupp, Karl Ludwig, Student Adviser, (265, MF 10:15-12:15, W 8:15-12:15, TTh 11:15-12:15) — Local 42, 148 Encina

†Searles, Colbert, Associate Professor of Romanic Languages, (245, TTh 11:15, Th 4) — Local 63, 11 Alvarado

Sears, Harry Johnson, Instructor in Chemistry, (5c, 1:30-4:30) — PA 435Y, 635 Bryant-p

†Sears, Jesse Brundage, Assistant Professor of Education, (52, 10:15) — PA 540L, 627 Gilman-p

[Sewall, Edward Cecil, Clinical Professor of Surgery, — Silver City, N. M.]

Seward, Samuel Swayze, Jr., Assistant Professor of English, (208, MWF 10:45-11:15) — PA 728X, 262 Kingsley-p

†Show, Arley Barthlow, Professor of European History, (332, MWF 9:15-10:15) — PA 759, College Terrace

1Skaer, William Frederic, Instructor in Physiology, (484) — 339 Emerson-p

†Skinner, Macy Millmore, Associate Professor of German, (32, MWF 11:15) — PA 716K, College Terrace

†Sloan, William Henry, Instructor in Chemistry (49c, 1:30-4:30) — Alta Mesa-p

†Slonaker, James Rollin, Assistant Professor of Physiology, (481, MTThF 10:30-11) — PA 451, 334 Kingsley-p

†Smith, Everett Wallace, Assistant Professor of English, (207a, MT 10:15) — PA502K, Park Blvd., Mayfield

†Smith, James Perrin, Professor of Mineralogy and Paleontology, (329, 2-4) — PA 600Y, 1335 Cowper-p

†Snow, William Freeman, Clinical Professor of Hygiene and Public Health, — 2710 J St., Sacramento-s

†Snyder, John Otterbein, Associate Professor of Zoology, (423, 1:30-3:30) — PA 330Y, 1345 Cowper

Somers, George Burbank, Superintendent of Hospital, (Lane Hospital, 2-4) — SF, West 6193, Clay and Webster, SF-sf

†Spalding, Alfred Baker, Professor of Obstetrics and Gynecology, (Lane Hospital) — 2721 Jackson, SF-sf

†Stanley, Edward John, Instructor in Woodworking, (500, 8:15-4:30) PA 544K 269 Hawthorne-p

Starks, Chloe Lesley, Instructor in Graphic Art, (Studio, TWThF 1:30-4:30) PA 434Y 1115 Ramona-p

†Starks, Edwin Chapin, Assistant Professor of Zoology, (426, 1:30-4:30) PA 434Y 1115 Ramona

†Stillman, John Maxson, Professor of Chemistry, (44c, 2-4:30) Local 48 2 Alvarado

†Stillman, Stanley, Professor of Surgery, (2101 Webster St., 2-4) West 8819 2336 Broadway, SF-sf

Stoltenberg, Clara S., Associate Professor of Physiology, (485, MW 9:15-12:15, ThF 1:30-4:30) Local 24 7 Alvarado

†Stuart, Henry Waldgrave, Professor of Philosophy, (416, MW 11:30-12, TTh 9:30-10:15) Local 126 8 Alvarado

Sutliff, Helen Binninger, Chief Cataloguer, Library, 15 Salvatierra

†Swain, Robert Eckles, Professor of Chemistry, (33c, 2-4) PA 247 638 Channing-p

†Terman, Lewis Madison, Associate Professor of Education, (51, MWF 11:15) Local 178 9 Dolores

†Tolman, Cyrus Fisher, Jr., Acting Associate Professor of Economic Geology, (340, 8-12) 567 Forest

†Townley, Sidney Dean, Associate Professor of Applied Mathematics, (40, TTh 11:15-12) Local 16 33 Salvatierra

†Treat, Payson Jackson, Associate Professor of History, (230, MWF 11-11:25, TTh 10:15-11) Local 128 27 Salvatierra

[†Weymouth, Frank Walter, Instructor in Physiology, Baltimore, Md.]

[†Whitaker, Albert Conser, Professor of Economics, Chicago, Ill.]

†Wilbur, Ray Lyman, Professor of Medicine, (Faculty Room, Clinical Bldg., S. F., 12-12:30) PA 46 1201 Bryant-p

†Wildman, Murray Shipley, Professor of Economics, (222, TWThF 9-10, 2-3) Local 118 21 Alvarado

[2]Williams, Mary Wilhelmine, Acting Instructor in History (215, TTh 11:15-12:15) 639 Gilman-p

†Wing, Charles Benjamin, Professor of Structural Engineering, (278, 11:15-11:45) PA 449K 345 Lincoln

[2]Wintermute, George Preston, Clinical Instructor in Surgery, 40 El Camino Real, Berkeley-b

†Woodward, Frederic Campbell, Professor of Law, (3, 2:30-3) Local 62 21 Salvatierra

†Wyneken, Friedrich Alexander, Instructor in German,
(32, TTh 9:20-10) 576 Lincoln-p
[2]Yerington, Henry Herbert, Clinical Instructor in Medicine,
240 Stockton, SF-sf
Young, Hayes Wilson, Instructor in Metallurgy, Local 13
(560, 1:30-4:30) 109 Encina
†Young, Stewart Woodford, Professor of Physical PA 390L
Chemistry, (46c, 9:30-12, 2-5) Bryant and Tennyson-p
†Zinsser, Hans, Professor of Bacteriology, PA 299
(Museum, Sec. 3, Room 2, 2-3) 427 Embarcadero-p

DEPARTMENTAL AND OTHER ASSISTANTS

Adler, Howard Felix, Medicine, 1590 Broadway, SF-sf
[1]Ambrose, Arthur Warren, Civil Engineering, 59 Encina
Avery, Louise, History, 32 Lasuen
Bailey, Margery, English, 207 Hawthorne-p
†Banham, Frank Daniel, Foreman in Mechanician Shop, 1027 Emerson-p
Banks, William Henry, Medicine, 4402 California, SF-sf
[2]Barrow, Frank Elliott, History, 166 Encina
Beal, Carl Hugh, Geology and Mining, 459 Hamilton-p
Beasley, Shadworth Oldham, Gynecology, 425 Stockton, SF-sf
[2]Beaver, George Lovell, Electrical Engineering, 661 Gilman-p
[1]Beecher, Charles Edward, Civil Engineering, 192 Encina
Bell, May Knight, Entomology, 532 Homer-p
Bentley, Edith Naomi, Education Library, 555 Lytton-p
Bentley, Georgia Helen, Botany, 635 Homer-p
Birch, Catherine Ida, Order Department, Library, 36 Roble
Blethen, Taylor Jay, Botany, 19 Encina
Bly, Edwin Prescott, Applied Mathematics, 15 Alvarado
Boyd, Forrest Edwin, Physiology, 603 Lytton-p
Brasch, Frederick Edward, Loan Desk, Library, 911 Scott
[2]Brekke, Mabel Adella, Greek, Los Altos-l
Brown, Agnes Elizabeth, Loan Desk, Library, 412 Cowper-p
Brown, Marguerite, Cataloguer, Library, 27 Roble
Burbridge, Harry Carleton, Physics and Pure Math., 301 Kipling-p
[2]Burrell, Florence Cotton, Roble Gymnasium, 15 Lasuen
Burrows, John Robert, Surgery, 2132 Pine, SF-sf
Carus, Clayton Douglass, History, 241 Cowper-p
Carus, Hazel Gertrude, Roble Gymnasium, 241 Cowper-p
Chapman, John Frye, Encina Gymnasium, 52 Encina
Chiles, Chester Arthur, Cataloguer, Library, 16 Salvatierra
Childs, Leroy, Entomology, 6 Lasuen
[2]Chislett, William, Jr., Latin, 11 Alvarado
[2]Clark, Birge Malcolm, Graphic Art, 4 Cabrillo
[1]Cooke, John Daniel, Loan Desk, Library, 4 Alvarado
Cooper, Warren Gosselin, Geology and Mining, 4 Encina
[1]Corbaley, Frank E., Laboratory Attendant, ElecEng., Mariposa Hotel-p
Cox, Catherine, Roble Gymanisum, 855 Chapman SJ-sj
Cox, Joel Bean, Applied Mathematics, 60 Encina

Cox, William Edward, Economics, 16 Salvatierra
[1]Crawford, James Porter, EncinaGymnasium&Pharmacology, 79 Encina
[2]Cross, Donella Mary, Latin, Mayfield-m
Dodd, John McKee, Chemistry, 405 Emerson-p
[2]Dodge, Walter Jennings, Applied Mathematics, 97 Encina
Dooling, Maurice Timothy, Jr., Law Library, 85 Encina
Downing, Edgar Dale, Pathology, Lane Hospital, SF-sf
Draper, Roscal Leroy, Physiology, 58 Encina
Driscoll, Marjorie Charles, English, 51 Roble
[1]Duff, James Leo, Graphic Art, Menlo Park
[1]Duryea, Robert Francis, Civil Engineering, 8 Salvatierra
Dyer, Thomas Laffayette, Loan Desk, Library, 96 Encina
Ewell, Elmer R., Curator, Chemistry Laboratory, 523 Middlefield-p
[1]Finney, Wallace Rolland, Mechanical Engineering, 12 Encina
Fisher, Arthur Lawrence, Surgery, 2907 Jackson, SF-sf
Fleming, Clarence Edwin, Economics, 22 Encina
Forbes, William Boomer, Stenographer, Mech. Eng., 8 Salvatierra
Gedney, Frederick Mears, Surgery, 304 Clement, SF-sf
[2]Gibb, James Albert, Mechanical Engineering, San Juan Heights
Goddard, Win Rawdon, Chemistry, 407 Waverley-p
[1]Goodwin, Clarence Bernard, Civil Engineering, Sunnyvale-s
Green, Aaron Samuel, Surgery, 531 9th Ave., SF-sf
Green, Waldron A., President's Office, 8 Salvatierra
Gregg, Harley C., Machinist Helper, Mech. Lab., Evergreen Park
Gunnell, Dorothy Parks, French, 1 Salvatierra
[2]Hadden, Fannie, Secretary Committee on Public Health, 1157 Ramona-p
[1]Halcombe, Norman M., Civil Engineering, 111 Encina
[1]Hammond, Clarence Bray, English, 321 Alma-p
Harding, Edwin Reginald, Chemistry and Pharmacology, 177 Encina
Hatfield, George Juan, Law Library, 608 Kingsley-p
Havens, Myrtil Cole, Mechanician, Machine Shop, 535 Homer-p
Haas, Sylvan Lewis, Surgery, 1678 Sacramento, SF-sf
Hawley, George W., Civil Engineering, 55 Encina
Hayes, Jesse Ernest, Civil Engineering and Applied Math. 130 Encina
Hayward, Ida R., Lane Library, 1259 O'Farrell, SF-sf
Heald, Ethel Grace, Serial Department, Library, 558 Hawthorne-p
Hilmer, Netta Haffner, in German, 151 Cowper-p
Hilton, Frank Howard, Encina Gymnasium, 26 Lasuen
[1]Holbrook, Lettie DeVoe, History, 324 Emerson-p
Holcomb, Grant, Law Library, 26 Lasuen
Holeman, George Stevenson, Encina Gymnasium, 176 Waverley

Hollman, Esther Karleene, Registrar's Office, 39 Roble
Holsclaw, Florence Mabel, Medicine, 1714 Clay, SF-sf
Horne, William Clemons, Custodian of Shops, San Mateo-sm
Horton, Marion, Cataloguer, Library, 5 Salvatierra
Howell, Bertha Blanchard, Physics, 33 Salvatierra
Hyde, Clarence Elmer, Surgery, 845 Sutter, SF-sf
Isnardi, Mario, Gynecology, 1436 Union, SF-sf
Kay, Willard E., Physiology, Encina
Keefer, Chauncey Tennent, Civil Engineering, Encina
Keen, Sadie, Stenographer, Geology and Mining, 1221 Webster-p
Kennedy, Arthur Garfield, English, 1130 Bryant-p
[1]Kingsley, Lydia Esther, Cataloguer, Lane Library, 2202 California, SF-sf
Knollin, Ernesto Ray, Encina Gymnasium, 78 Encina
[2]Lammiman, Elwood George, Library, Acacia
Lantz, Grover Berner, Metallurgy, 76 Encina
Lawrence, George Louis, Romanic Languages, 16 Alvarado
Logan, William Anthony, Romanic Languages, 36 Richmond, SJ-sj
Luker, Benjamin Franklin, Romanic Languages, 909 University-p
Luttrell, Peter Harrison, Medicine, 1628 Steiner, SF-sf
[2]Lyman, George Byron, Pharmacology, 166 Encina
Lyman, George Dunlap, Medicine, University Club, SF-sf
[1]MacCormac, Josephine Veronica, Greek, 334 Lincoln-p
McCready, Harry Lewis, Civil Engineering, 633 Channing-p
McNaught, Harvard Young, Surgery, 1720 Pacific, SF-sf
Maloney, Henry Wilfred, Encina Gymnasium, 176 Waverley-p
[2]Marshall, Kenneth Irving, Applied Mathematics and Mechanical Engineering, 88 Encina
Martin, Thomas Powderly, History, 142 Encina
Mayer, Kenneth, President's Office, Mayfield
Meinhard, Arthur Richard, Bacteriology, 251 Emerson-p
[1]Migge, Frederick, Anatomy, University Hotel-p
Miller, John Paul, Law Library, 18 Encina
[2]Mittenthal, Norman Jerome, Electrical Engineering, 146 Hawthorne-p
Moffitt, George Wilber, Physics and Mathematics, 603 Waverley-p
Moore, Chester Biven, Obstetrics, Lane Hospital, SF-sf
[2]Moore, Harold Staats, Medicine, 2158 Union, SF-sf
Morgan, Jeannette Catherine, Cataloguer, Library, College Terrace
Mosher, Hugh Harold, Chemistry, 201 S. Crittenden, SJ-sj
Murray, Robert Lindley, Chemistry, 1019 Bryant-p
[2]Narver, David Lee, Civil Engineering, 6 Salvatierra
Newman, Ollis Willard, Loan Desk, Library, 24 Encina

[2]Oliver, Jean Redman, Lane Library, 2327 Sacram., SF-sf
O'Neill, Arthur Aloysius, Medicine, Hospital Contagious Diseases, SF-sf
Ophüls, Louise, Lane Library, 2699 California, SF-sf
Oshima, Sho, Philosophy, 718 Emerson-p
Ostenberg, Zeno, Chemistry, 140 Encina
[2]Paris, Etta L., Roble Gymnasium, Harker School-p
Park, Carl Joseph, Lantern Operator, 51 Encina
Parker, Frances Dorothy, Greek, 358 Homer-p
Paulson, John Edwin, Physiology, 704 Bryant-p
Peck, Edward Lawrence, Mechanical Engineering, 134 Encina
Peck, Gladys Amiel, Stenographer, History, 656 Bryant-p
Peckham, Ignatius Martin, Law Library, 74 N. 12th, SJ-sj
Perham, Philip D. B., Library, 335 Melville-p
Peters, Louise Marie, Cataloguer, Library, 11 Alvarado
Pingree, Louis William, Chemistry, 156 Encina
Pratt, Francis Sitwell, Chemistry, 178 Encina
Pugh, Edmund Wright, Law Library, 26 Lasuen
Ramsey, Agnes C., Mimeographer, 20 Lasuen
Righter, George Lutes, History, 31 Encina
[1]Risling, Bertram August, Pharmacology, 935 Webster-p
Root, William Thomas, Psychology, 101 Encina
Rouiller, Jeanne Rose, Romanic Languages, 431 Channing-p
Rouiller, Marcelle Henriette, Roble Gymnasium, 431 Channing-p
Rude, Anna Elizabeth, Obstetrics and Gynecology, 1501 Larkin, SF-sf
Russell, Frank Marion, History, 26 Lasuen
[2]Sandstrom, Arthur Charles, Civil Engineering, 55 Encina
[2]Scholz, Herbert Joseph, Electrical Engineering, 130 Encina
Scott, Earl Theodore, Encina Gymnasium, 185 Encina
Scott, Thomas Benjamin, Storekeeper, Chemistry Laboratory, Mayfield-m
Smiley, Frank Jason, Botany, 446 Hamilton-p
[1]Smith, Harry James, Pharmacology, 712 Bryant-p
Smith, Mary Elvira, Cataloguer, Library, 466 Ruthven-p
Smith, Talmage Laughner, Loan Desk, Library, 96 Encina
Somers, Howard, Surgery, 135 Stockton, SF-sf
Speer, James Beryl, President's Office, 25 Salvatierra
Stapleton, Leona Esther, President's Office, 5 Lasuen
Stidston, Russell Osborne, English, 757 Homer-p
Stillman, Minna, Reference Room, Library, 2 Alvarado
Stillson, Frank Leonard, Custodian, Encina Gymnasium, 451 Ruthven-p
[2]Stuart, Archer Bell, Encina Gymnasium, 621 Gilman-p
[2]Talbert, Wilford Ebenezer, Education, 424 High

[1]Taylor, Leroy Edward, Library, 244 Webster-p
Thomas, Earl Charles, Civil Engineering, 53 Encina
[2]Thompson, William Francis, Entomology and Bionomics, 32 Encina
Tittle, Ward Clark, Law Library, 120 Encina
Todd, Hannah Lillian, Library, 557 Hamilton-p
Topping, Frank Pixley, Gynecology, 1886 Vallejo, SF-sf
Tupper, Roland Beatty, Medicine, 297 Church, SF-sf
Uhlman, Walter, Engineer Mechanical Laboratory, 420 Emerson-p
Van Nuys, Roscoe Golden, Medicine, 2200 Webster, SF-sf
Van Sicklen, William John, Chemistry, 347 Ramona-p
Vaughn, Romney Leigh, Civil Engineering and Applied Math., 95 Encina
[1]Vickery, Martha Ellen, SecretaryCommittee onPublicHealth, 15Lasuen
Waelty, Waldo Ralph, Chemistry, 4 Encina
[1]Washburn, Henry Lord, Botany, 101 Encina
[1]Waters, Pearl Elizabeth, Pure Mathematics, Santa Clara
[2]Weaver, William Irwin, Pharmacology, 407 Waverley-p
Wenk, Morris, Physics, 25 Salvatierra
West, Howard Frank, Physiology, 230 Kellogg
[1]Wetmore, Clyde T., Encina Gymnasium and Bacteriology, 52 Encina
[2]Whipple, Stephen Knight, Jr., Civil Engineering, Burlingame-b
Willard, Frankie, Entomology, 7 Lasuen
[1]Williams, Florence, Botany, 334 Lincoln-p
Williamson, Laura Agnes, Cataloguer, Library, 611 Waverley-p
Winterberg, Walter Hoepfner, Surgery, 1925 Broadway, SF-sf
Wiseman, Alto Echo, Physics, 27 Roble
[2]Withey, Hettie Alice, History. 12 Alvarado
Wolfson, Julian Mast, Medicine,
[2]Wollaston, Charles Hyde, Encina Gymnasium, 7 Encina
[1]Wood, Frederick Bertram, Law Library, Acacia
Wood, George Augustus, Obstetrics and Gynecology, 1200 Pine, SF-sf
Woodruff, Mary Jeanette, Stenographer, Library, Mountain View-m
Woolsey, Chester Howard, Surgery, 2220 Sacramento, SF-sf
Wyckoff, Harry Alphonso, Encina Gymnasium, 342 Homer-p

BUSINESS ADMINISTRATION

Ames, Edwin M., Voucher Clerk.....19 Lasuen
Local 69
Beebe, Henry W., Office Manager.....19 Noe St., S. F.
Blodgett, David P., Bookkeeper .....268 Homer-p
Dorgan, Michael H., Foreman Plumber.....Mayfield-m
Freedman, Sigle, Foreman.....Mayfield-m
PA 161
Hewston, John E., Farm Superintendent.....Stanford University
Local 28
Jennings, Frank O., Stenographer.....329 Hamilton-p
Lathrop, Charles G., Treasurer and Business Manager.....Alta Vista
Local 4
McDonnell, J. Walter, Foreman Electrician.....Palo Alto-p
Monasch, David, Purchasing Agent...Nevada Bank Bldg., San Francisco
Peterson, Harry C., Curator Museum.....672 Homer-p
Quinn, Albert A., Clerk Encina.....929 Webster-p
Rich, Samuel H., Cashier.....3180 Washington St., San Francisco
Schilling, John C., Foreman Carpenter.....529 Addison-p
Smith, George B., Foreman Painter.....751 Ramona-p
Stager, Raymond M., Storekeeper.....532 Homer-p
Usinger, Charles F., Auditor.....San Jose
Waterman, Edward H., Chief Engineer.....Palo Alto
Waugh, Clarence W., Clerk.....Encina

SCHOLARS AND FELLOWS

LELAND STANFORD JUNIOR MEMORIAL SCHOLAR

Kilcline, William Francis, '15.

LAW ASSOCIATION SCHOLAR

Sontheimer, Urban Alexander,
A. B., Stanford, 1912.

THE ALUMNI JORDAN MEDICAL SCHOLARS

Wetmore, Clyde T.,
A. B., Stanford, 1913.

Wyckoff, Harry Alphonso,
A. B., Stanford, 1907.

ALUMNI ADVISORY BOARD FELLOW

Williams, Mary Wilhelmine,
A. B., Stanford, 1907; A. M., 1908.

STUDENTS

Name; home residence; major subject; status; University residence; post-office. Post-office in all cases *Stanford University* except where university residence is followed by initial letter of town ('p' indicates *Palo Alto* post-office; 'Mayfield-m,' *Mayfield* post-office, etc.) Street address *Palo Alto* or *Campus* unless otherwise named.

Status.—gr., graduate student; sp., special student; unc., unclassified law. The figures after major subject indicate the number of units of university work completed (and counting toward the 120 units required for graduation), no account being taken of 'deferred,' 'incomplete,' or 'conditioned' work. The dagger (†) indicates unadjusted standing from other colleges and universities. (Phys.-Physics; Phyl.-Physiology.)

The superior number [1], prefixed to the name of a student indicates registration for the first semester only; [2] indicates second semester only.

Abel, Edson Cronk	Arcadia	Law 101,	35 Encina
Acree, Louis Carlton	Vallejo	Graph. †6	407 Waverley-p
Adams, Earl Clinton	San Jose	PreL. 5,	Delta Tau Delta
Adams, James Douglass	Stanford Un.	PreL. 52,	Delta Chi
Adams, Robert Gemmell	Oakland	C. E. 74,	Beta Theta Pi
Adcock, Robert Glover	Salinas	C. E. 70,	169 Encina
Addleman, Clarence Lloyd	Acton, Ind.	M. E. 47,	219 Ramona-p
[1]Ahlswede, Ada Dorothy	Pasadena	Econ. 99,	KappaAlphaTheta
Akahoshi,Ichiji Miyata	Kumamoto,Jpn.	Econ. 105,	Japanese Club
Albee, Clara Lorena	Palo Alto	Engl. 12,	424 Webster-p
Albertson, Mildred	Whittier	Engl. 106,	16 Madrono
Alderson, Edwin Lyle	San Diego	PreL. 42,	11 Lasuen
Alderson,ElizabethHarrington	SanDiego	Engl. 20,	Pi Beta Phi
Alderton, Barbara	Brooklyn, N. Y.	Germ. 54,	915 Channing-p
Allcutt, Chester Thorne	Pasadena	E. E. 46,	4 Lasuen
Allen, Alfred George	San Diego	Lawsp.unc.13,	1106 Bryant-p
[1]Allen, Alice Chalfant A. B., Stanford, 1913.	San Jose	Germ. 120	9 Alvarado
[2]Allen, Anais Julia A. B., Stanford, 1911.	South Pasadena	Engl. gr.,	25 Madrono
Allen, Elizabeth Gladys	Los Gatos	Econ. 39,	Gamma Phi Beta
[1]Allen, Fred Cruickshank	Bakersfield	Law sp. unc. 32,	Delta Chi
[2]Allen, Matilda F. A. B., New Mexico, 1912.	Acomito, N. M.	Span. gr.,	24 Roble

Allen, Martin Whitney	Wallace, Idaho	Engl. 48,	Phi Kappa Psi
Ambrose, Arthur Warren	Lockeford	Geol. 115,	59 Encina
Ames, Ione Ethel	San Dimas	Hist. 10,	80 Roble
Amsden, Donna Hinds	Los Angeles	Engl. 107,	Delta Gamma
Anderson, Adrien Louis	Santa Cruz	M. E. 11,	Delta Tau Delta
Anderson, Arkie Curl	St. Johns, Ore.	PreL. 5,	19 Salvatierra
Anderson, Clarence Sherman	Blackfoot, Id	PreL. 41,	69 Encina
Anderson, Frank Edward	Los Angeles	E. E. 108,	164 Hamilton-p
Anderson, Frank Julius	South Vallejo	Chem. 9,	119 Encina
Anderson, Howard Salsbury	SantaCruz	PreL. 45,	Kappa Sigma
Anderson, Laurel Edwin	Burlingame	Law 76,	Burlingame-b
Anderson, Mayme Minerva	Tulsa, Okla.	Educ. 64,	250 Lowell-p
Anderson, Robert Edwin	San Francisco	Geol. 112,	162 Encina
Andreen, Harry Mayo	Woodside	Geol. 117,	104 Encina
Andrews, Esten Randolph	Santa Clara	Phyl. 68,	1267 Frnkn, SC-sc
Andrews, Helmus Weddel	San Diego	Law 69,	Kappa Alpha
Andrews, Rupert Burke	San Diego	E. E. 101,	Kappa Alpha
Angell, Mabel Bayard	Palo Alto	Psych. 26,	1200 Bryant
Angell, Thomas Francis Bayard	Palo Alto	Grk. 38,	1200 Bryant
de Angulo, Jaime	Palo Alto	Ent. gr.,	9 Dolores
B. S., Paris, 1903; M. D., Johns Hopkins, 1912.			
Appel, John Monroe	Palo Alto	C. E. 13,	459 Hawthorne-p
Appleton, Harry	San Jose	Chem. 54,	546 S.Whit., SJ-sj
Arakawa, Futoshi	Hilo, Hawaii	C. E. 78,	Japanese Club
[1]Argabrite, Clarence Cannon	Ventura	E. E. 122,	160 Encina
A. B., Stanford, 1913.			
[1]Argabrite, Marguerite Boyd	Easton	Math. 71,	Easton
Argabrite, Walter Marion	Ventura	E. E. 91,	160 Encina
Argall, Leland Stanford	Spokane, Wn.	PreL. 57,	Cardinal Club
Armstrong, John W. F.	Fivemiletown, Ire.	E. E. 97,	125 Encina
Arnott, John David	Palo Alto	C. E. 29,	798 Palo Alto-p
Artt, William Thomas	Read, Colo.	Educ. 51,	549 Cowper-p
Ashford, Harry Thomas	Fruita, Colo.	M. E. 37,	Univ. Ave.-p
Aten, Albert Boyce	El Centro	PreL. 9,	19 Salvatierra
[2]Aubert, Louisette Marie	San Mateo	Chem. †,	220 Clark, SM-sm
Avery, Louise	San Jose	Hist. 105,	Delta Delta Delta
Bach, Ralph Emmett	San Diego	Law 69,	Delta Chi
Bacon, Alice Cornelia	Oakland	Fr. 12,	Delta Gamma
Bacon, Ellard Ansel	San Jose	M.E.sp. 20,	Theta Delta Chi
Bagley, Flora Anne	Burlingame	Lat. gr.,	35 Salvatierra
A. B., Stanford, 1912.			

Baier, Harry Howard — Columbia — Law sp. unc. 7, 118 Encina
Bailey, Margery — Palo Alto — Engl. 81, 207 Hawthorne-p
Baker, Lois — Los Angeles — Engl. 108, Madrono
Baker, Milton Palmer — Los Gatos — M. E. 13, Los Gatos-l
Baldwin, Beth — Salt Lake City, Utah — Hist. 37, Delta Gamma
Ball, Hazel Myra — San Jose — Engl. 54, Stevens Crk Rd-sj
Bandini, Elliott — Pasadena — M. E. 11, Chi Psi
[2]Barbour, Ashburn Kennett — Helena, Mt. — Engl. sp., 22 Lasuen
Bardin, Ethel Ora — Salinas — Graph. 109, Langworthy Clb
[1]Bargar, Margaret Elizabeth — Holloway, O. — Engl gr., 204 Univ. Ave-p
B. S., Buchtel College, 1894.
Barker, Anna Ruth — Palo Alto — Math. 70, 1010 Emerson-p
[1]Barker, Charles Abner — Redlands — PreL. 38, Delta Chi
Barker, Earle Wright — San Jose — Educ. 27, 840 Hedding, SJ-sj
Barnard, Walter Everett — Worcester, Ms. — Hist. gr., Phi Gamma Delta
A. B., Stanford, 1913.
Barnett, George DeForest — Santa Rosa — Med. gr., 2327 Sacra, SF-sf
A. B., Stanford, 1906; A. M., 1909.
Barnett, George Ingham — San Francisco — Geol. 59, Kappa Alpha
Barrett, Alliene Cash — Edwards, Miss. — Engl. 105, 5 Roble
A. B., Mississippi Industrial Institute and College, 1910.
Barrow, Frank Elliott — Los Angeles — Hist. 97, 166 Encina
Barry, David Morse — Santa Barbara — Hist. 43, 132 Encina
Barry, George Long — San Jose — Phyl. 79, 18 Encina
Barry, William Taylor, Jr. — Santa Barbara — Engl. 35, 132 Encina
Barshinger, Byron Walter — Gilroy — Chem. 54, 100 Encina
Bartlett, John Hale — Pasadena — C. E. 11, Alpha Tau Omega
Barton, Millar Dodge — Los Angeles — Geol. 27, Chi Psi
Baruch, Frederick, Jr. — San Francisco — E. E. 50, 9 Encina
Barzen, Alva Emrick — Pasadena — Econ. 54, 469 Homer
Bassett, William Waters — Escondido — PreL. 39, 179 Encina
[2]Batcheller, Helen May — Los Angeles — Hist. 44, Madrono
Baxter, Elizabeth Helen — Alexandria, Ind. — Engl. 103, 12 Alvarado
Beach, Natalie Louise — Palo Alto — Germ. 98, 660 Waverley-p
[1]Beach, Philip L. — Prescott, Ariz. — E. E. †23, 835 Waverley-p
Beal, Blanche Iona — Palo Alto — Span. 46, 459 Hamilton-p
[1]Beal, Carl Hugh — Palo Alto — Geol. 130, 459 Hamilton-p
A. B., Stanford, 1913.
Beard, Hawley Wetmore — San Francisco — M. E. sp. 16, 110 Encina
[1]Beard, Ruth — Modesto — Lat. gr., 25 Roble
A. B., Stanford, 1912; A. M., 1913.
[1]Beauman, Loui Charles — Ogden, Utah. — PreL. 5, Zeta Psi

Beaver, Ella Wissie — Tulare — Hist. gr., Harker School-p
A. B., Stanford, 1912.
Beaver, George Lovell — Campbell — E. E. 54, — Encina
Beckwith, Henry Truman — Hesperia — Geol. gr., — Theta Delta Chi
A. B., Stanford, 1908.
Bedeau, Grover William — Marysville — PreL. 31, — 71 Encina
Beebe, Charlie Elizabeth — Woodland — Educ. 80, — 48 Roble
Beebe, Henry Clare — Ashland, Ore. — Geol. 26, — Encina
Beebe, Mary Josephine — Woodland — Hist. 43, — 26 Roble
Beecher, Charles Edward — Monrovia — C. E. 111, — 192 Encina
Beeger, Henry Albert — Redwood City — Econ. 98, — Redwood City-r
[2]Beeson, Joseph Josiah — Los Angeles — Geol., — 36 Encina
[1]Beharrell, Helen Elizabeth — San Diego — Fr. 125, — Delta Delta Delta
A. B., Stanford, 1913.
Behrens, Earl Charles — Redding — Law 81, — 74 Encina
Behrens, Luella Eva — Redwood City — Phyl. †7, — Gamma Phi Beta
Belcher, Frank Baker — Pomona — Law 97, — Theta Delta Chi
Bell, Dixie Alberta — St. Helena — Germ. 107, — Alvarado Hall
Bell, Gollin — San Francisco — E. E. 29, — Encina
Bell, Vernon A. — Prineville, Ore. — Hist. 4, — Stanford Inn
Bellinger, Hart Marcus — Plainwell, Mich. — PreL. 7, — Delta Chi
[1]Bemis, Richard Alvin — San Bernardino — M. E. 1, — 704 Bryant-p
Benham, Herbert Rovell — McKittrick — Phys. 102, — 405 Emerson-p
Bennett, James William — Greensburg, Ind. — Engl. 33, — 11 Salvatierra
Bennett, Raine — Menlo Park — PreL. 30, — Theta Delta Chi
Bennett, Rose Margaret — San Diego — Math. gr., — 333 Waverley
A. B., Stanford, 1912.
Bentley, Georgia Helen — Palo Alto — Bot. 38, — 635 Homer-p
Benton, Anna Laura — Palo Alto — Span. 12, — 522 Emerson-p
[1]Bequette, James Clarke — Visalia — PreL. 11, — Phi Kappa Psi
Berbert, Henry — San Mateo — C.E. 13, — 91 Clark, San Mateo-s
Berger, Alice Ruth — San Jose — Chem. gr., — 73 N. 6th, SJ-sj
A. B., Stanford, 1908.
[1]Berry, Samuel Stillman — Redlands — Zool. gr., — 79 Encina
A. B., Stanford, 1909; A. M., Harvard, 1910; Ph. D., Stanford, 1913.
Best, Neil Orrin — Monterey — Educ. 64, — 8 Encina
[2]Betterton, Cherrill Roach — Seattle, Wn. — Econ. sp., — Sigma Alpha Ep
Beurhaus, George Henry — Tacoma, Wn. — Chem. 102, — Phi Delta Theta
Bevan, Charles Frederick — Baltimore, Md. — M. E. †13, — 18 Alvarado
Biddle, Ethel Riggs — Centreville, Ia. — Educ. 104, — 651 Waverley-p
Bingham, Beatrice J. — Los Angeles — Engl. 77, — Langworthy Club
Binkley, Tholow — Hollister — Educ. gr., — 214 Emerson-p
A. B., Stanford, 1910.

[2]Binns, Mildred Elizabeth	Bryan, Ohio	Econ.,	Roble
[2]Birch, Catherine Ida	Redlands	Lat. gr.,	34 Roble
A. B., Stanford, 1911.			
Birdsall, Edward M.	Chadron, Nebr.	Econ. 31,	Sigma Nu
Black, Lewis Pitt	Monrovia	PreL. 13,	187 Encina
Black, Sherman Lawrence	Monrovia	Law sp. 85,	187 Encina
Blanchard, Paul E.	Grants Pass, Ore.	Law 107,	44 Encina
Bland, Reba	San Jose	Ent. 44,	Alpha Omicron Pi
Blase, Roland Roy	N. St. Paul, Minn.	C. E. 74,	Sigma Nu
Blauer, Emma Elizabeth	San Jose	Educ. gr.,	361 Vine, SJ-sj
A. B., Stanford, 1913.			
Bleecker, Robert Boynton	Pasadena	Econ. 9,	Delta Upsilon
Blethen, Taylor Jay	Portland, Ore.	Bot. 102,	20 Encina
Bliss, Anna	Chula Vista	Germ. 79,	5 Roble
Block, Fred A.	Tacoma, Wn.	PreL. 31,	Sigma Chi
Blodget, Ward B.	Huntington Beach	C. E. 43,	191 Encina
Bloeser, William Hargrave	Los Angeles	Econ. 47,	Kappa Alpha
Blumenthal, Maurice	Douglas, Ariz.	PreL. 13,	195 Encina
Bly, Edwin Prescott	Los Angeles	C.E. 107,	Alpha Tau Omega
Boal, Marian Dickenson	National City	Engl. 10,	Alpha Omicron Pi
Bodley, Edith May	Palo Alto	Engl. 76,	353 Lytton-p
[1]Bodley, Ellison Wilhelmina	Palo Alto	Germ. 120,	353 Lytton-p
A. B., Stanford, 1913.			
Boesch, Claribel Ruth	San Jose	Engl. 12,	318 S. 10th, SJ-sj
Boezinger, Amelie Elizabeth	Palo Alto	Graph. 9,	176 Bryant-p
Boezinger, Frank	Palo Alto	C. E. sp. 85,	176 Bryant-p
Bohart, George Shambo	Palo Alto	Chem. gr.,	856 Middlefield-p
A. B., Stanford, 1911; A. M., 1912.			
Bolter, Lemuel Rose	Logan, Iowa	PreL. 2,	545 Forest
[1]Bonebrake, Glenn E.	Boulder Creek	E. E. 3,	329 Hawthorne-p
[1]Bonetti, Irene Marguerite	Santa Maria	Hist. 69,	Madrono
Bonnett, Edward Mortimer	Riverside	M. E. 50,	12 Encina
Bonney, Robert Cecil	Roswell, N. M.	Law 62,	92 Encina
[2]Boomershine, Edward R.	Versailles, O.	Math.,	415 Lytton-p
Bordé, Harry Joseph	Santa Monica	Law 61,	18 Alvarado
Borden, Arthur Dickie	Palo Alto	Bot. 108,	32 Encina
[2]Bordwell Helen,	Los Angeles	Hist. †,	27 Madrono
Borough, Richard Marguerite	San Fran.	Hist. 50,	Delta Gamma
Bothwell, Charlotte Louise	SaltLakeC., U.	Hist. 43,	Delta Delta Delta
Boulware, Edna	Palo Alto	Hist. 15,	169 Waverley-p
Bowden, Mary Bethel	San Jose	Hist. 101,	Kappa Kappa Gam

Bower, William David	Salt Lake C., U.	Econ. 75,	Sigma Chi
Bowes, Edwin Lawrence	Pasadena	Econ. 43,	18 Alvarado
Bowes, William Ketcham	Pasadena	Econ. 43,	18 Alvarado
Boyd, Forrest Edwin	Fowler	Phyl. 34,	603 Lytton-p
Boyd, Harold Chester	San Francisco	C. E. 97,	Delta Kappa Epsil
[1]Boyers, Luther Musson	Palo Alto	Med. gr.,	729 Emerson-p
A. B., Stanford, 1912.			
Boyle, Charles Emerson	Escondido	Chem. 42,	720 Cowper-p
Boyle, Louis Morris	Los Angeles	Econ. sp. 5,	Kappa Sigma
[2]Boyle, Margaret Mary	Los Angeles	Engl.,	430 Kingsley-p
Brace, William	Chicago, Ill.	Law 60,	659 Melville-p
Braden, Joseph Ross	Santa Clara	PreL. 8,	Phi Kappa Psi
Bradford, Warren Mead	Placentia	E. E. 52,	180 Encina
Bradley, Anna Laura	Pasadena	Econ. 94,	Pi Beta Phi
Bradley, Helen	Palo Alto	Span. 84,	645 Lytton-p
Bradt, Harlan Hurlbut	Duluth, Minn.	Geol. 48,	21 Salvatierra
Brady, Emmett James	San Francisco	Med. gr.,	2327 Sacram.SF-sf
A. B., Stanford, 1911.			
Brainerd, Fred Lindley	Los Angeles	Chem. 95,	Kappa Sigma
Brandt, Emil Charles	Pasadena	C. E. 62,	Delta Upsilon
Branner, George Casper	Stanford Univ.	E. E. 82,	Delta Upsilon
Brekke, Mabel Adella	Los Altos	Grk. gr.,	Los Altos-l
A. B., Stanford, 1913.			
Brennen, Alice Anna	Blaine, Nevada	Lat. 75,	21 Madrono
Breuner, John, Jr.	San Francisco	Law 42,	Sigma Nu
Brewer, Edward Vere	Elyria, Ohio	Germ. gr.,	Coll.Pacific,SJ-sj
A. B., Stanford, 1911.			
Bridgman, Roy Wade	San Jose	Educ. 102, 343	S. 2d, SJ-sj
Briggs, Alice	Hollywood	Econ. 74,	Pi Beta Phi
Briggs, Gladys Watson	Santa Ana	Engl. †22,	KappaAlphaTheta
Briggs, Ivon Clay	San Francisco	C. E. 110,	Encina
Briggs, Revoe Carlisle	Pasadena	C. E. 111,	16 Salvatierra
Brinkmeyer, Henry, Jr.	Prescott, Ariz.	M. E. 10,	93 Encina
[2]Brix, Emma Marguerite	Fresno	Germ.,	88 Roble
Bromley, Angelica	San Francisco	Hist. 69,	Delta Delta Delta
Brooke, Philip Slaughter	Spokane, Wn.	PreL. 47,	Phi Kappa Psi
Brooks, Anne	San Jose	Lat. 110,	Pi Beta Phi
Brown, Claude Everett	Stanford Univ.	Phyl. 74,	70 Encina
Brown, Comer Pitts	Long Beach	C. E. 79,	Theta Delta Chi
[1]Brown, Floyd Cromwell	Selma	C. E. 123,	54 Encina
A. B., Stanford, 1913.			
[1]Brown, Kirk Charles	Seattle, Wn.	Phyl. 75,	455 Forest-p

Brown, Lillian Harrison	Berkeley	Engl. 83, 333 Waverley-p
Brown, Marguerite	Providence, R. I.	Educ. 102, 27 Roble
Brown, Ralph James	Los Angeles	PreL. 13, Zeta Psi
Brown, Ralph Waldo	Shawmut	C. E. 107, 53 Encina
Brown, Ray Milton	Selma	Hist. 29, 94 Encina
Brown, Selden	Seattle, Wn.	Law 92, Beta Theta Pi
Brown, Sewall Solon	San Jose	PreL. 5, Sigma Alpha Epilson
Bruce, Starr Lewis	San Francisco	Econ. 41, 67 Encina
[1]Brun, Otis Gorham	San Francisco	Geol. 1, 445 Forest-p
Bryan, Miriam Alvada	Napa	Hist. 40, Pi Beta Phi
Brydolf, Vernon Mars	San Bernardino	Law 75, Sigma Nu
Buchly, Walter Eyster	Roswell, N. M.	Econ. 108, Encina
Buckingham, Elisabeth Lee A. B., Stanford, 1910.	Palo Alto	Engl. gr., 609 Kingsley-p
[1]Bucklin, George Francis	Imperial	Engl., 19 Lasuen
Buffum, George Mitchell	Pasadena	Econ. 104, Delta Kappa Epsil
Bullard, Corinne	Los Angeles	Hist. 43, Alpha Omicron Pi
Bullard, Helen Talbott	Los Angeles	Hist. 66, Kappa Alpha Theta
Bullis, Ileen	Los Angeles	Hist. 89, Alpha Phi
Bullis, James Stevenson	Los Angeles	PreL. 1, Beta Theta Pi
Burbank, William Freeman	San Jose	C. E. 10, 62 S. 12th, SJ-sj
Burbeck, William Baldwin	Pacific Grove	E. E. 33, Sigma Chi
Burbridge, Henry Carleton A. B., Stanford, 1908.	Palo Alto	Phys. gr., 301 Kipling-p
Buren, Anna Louise	Tacoma, Wn.	Hist. 11, Alpha Phi
Burkham, Eleanor Frances A. B., Stanford, 1913.	San Francisco	Engl. gr. 25 Roble
Burns, Eugenia Stewart	San Jose	Graph. 38, 9 Cabrillo
Burns, William Sherman	New York, N.Y.	Law 67, Phi Gamma Delta
Burrows, Harold Herbert	Salt Lake C., U.	Phyl. 37, 840 Bryant
[1]Bush, Barnard B.	Pasadena	Law 107, 161 Encina
Bush, Rowena Caroline	Redlands	Engl. 64, Alpha Omicron Pi
Bussert, Leonardo Money	Los Angeles	E. E. 82, 195 Encina
Butcher, Alice Elia	Santa Paula	Hist. 13, 81 Roble
Butcher, William Preston	Santa Barbara	Law 106, 181 Encina
Butler, May Jacqueline	Col. Springs, Col.	Engl. 104, 73 Roble
[1]Butterfield, Irvis Wilder	Palo Alto	Econ 835 Middlefield-p
Cage, Albert Gallatin	Riverside	E. E. 72, Kappa Alpha
Cain, Ruth	Salt Lake City, Utah	Engl. 26, 3 Madrono
Calderwood, Everett Morse	Palo Alto	E. E. 104, 531 Cowper-p
Callanan, Joseph Ignatius	San Francisco	Phyl. †23, 329 Hawthorne-p

Campbell, Alan Randolph	Palo Alto	Chem. 5,	334 Lincoln-p
[1]Campbell, Clarence P. A. B., Stanford, 1913.	Los Angeles	M. E. 121,	88 Encina
Campbell, Daniel Swan	Joplin, Mo.	PreL. 10,	194 Encina
Campbell, Edith Grace	Palo Alto	Educ. 8,	612 Waverley-p
Campbell, Erroll Preston	Modesto	C. E. 71,	11 Encina
Campbell, Frank Valpey	Palo Alto	PreL. 9,	612 Waverley-p
Campbell, James Albert	Campbell	Chem. 7,	Campbell
Campbell, Samuel James	Mt. Carroll, Ill.	Econ. 64,	Beta Theta Pi
Carbee, Gwin Wilbur	Los Angeles	C. E. 9,	93 Encina
Card, Thomas Adam	Palo Alto	Phyl. 41,	764 Channing-p
Carlton, Dave Pierce	Riverside	Geol. 65,	45 Encina
Carmody, Frank James	Elmira, N. Y.	Ent. sp. 37,	131 Encina
Carr, Brenton Stanley	Los Angeles	PreL. 19,	Kappa Sigma
[2]Carroll, Daniel B.	Arncliffe, Aust.	C. E.,	329 Hawthorne-p
Cartwright, James Henry, Jr.	Oregon, Ill.	Econ. 39,	90 Encina
Carus, Clayton Douglass	Palo Alto	Hist. 113,	241 Cowper-p
Carus, Evelyn Temperance	Palo Alto	Hist. 88,	9 Roble
Carus, Hazel Gertrude	Palo Alto	Phyl. 10,	241 Cowper-p
Cary, Edward Guilford	San Francisco	Med.sp.164½,	300PageSF-sf
[2]Casad, Elizabeth Gail	Oakland	Hist. †,	69 Roble
Cass, Donald	S. Pasadena	Phyl. 71,	Zeta Psi
Cass, Louis	S. Pasadena	Econ. 101,	Zeta Psi
Cass, Quincy	S. Pasadena	PreL. 8,	Zeta Psi
Castle, Otis Henry	Pasadena	Law 70,	Delta Chi
Chace, John Derrol	San Jose	Econ. 10,	Delta Kappa Epsil
[2]Chaffee, Frank Everett	Pasadena	Zool. †,	12 Univ. Hotel
Chandler, Alice May	Los Angeles	Germ. 77,	Alpha Omicron Pi
[1]Chandler, Kathleen	San Diego	Hist. 41,	Pi Beta Phi
Chandler, Wilbur Ray	Fresno	Hist. 107,	126 Encina
Chapin, Harold Addison	San Jose	Geol. sp. 12,	College Terrace
[1]Chapin, Theodore B. S., Occidental, 1908.	Los Angeles	Geol. gr.,	Los Angeles
Chapman, Herbert Samuel	Clayton	Phyl. 77,	10 Encina
Chapman, John Frye A. B., Stanford, 1909.	Redlands	Med. gr.,	52 Encina
[2] Chapman, Sherwood	San Francisco	Econ.,	Kappa Alpha
[1]Check, Elliott Everett	San Francisco	Graph. 29,	730 Bryant-p
Check, Neoma	San Francisco	Econ. 77,	629 Forest-p
Childs, Leroy	Redlands	Ent. 105,	Phi Delta Theta
Chiles, Chester Arthur	Ellensburg, Wn.	Law 55,	16 Salvatierra

Chislett, William, Jr. Los Angeles Lat. gr. 11 Alvarado
A. B., Stanford, 1910; A. M., 1912.
Christensen, Albert Eugene Audubon,Ia. C. E. 11, 21 Encina
Churchill, George Milton Claremont C. E. gr., 756 Bryant
B. S., Pomona, 1911.
Claggett, Strabo Vivian Long Beach Law †32, Chi Psi
Clark, Alvan Witcombe San Jose Econ. 41, 898 S. 8th, SJ-sj
Clark, Birge Malcolm Stanford Univ. Graph. 75, 4 Cabrillo
Clark, Douglas Menlo Park Geol. 75, Menlo Park-mp
Clark, Edmund Starling Los Angeles M. E. 40, Zeta Psi
[1]Clark,EdwardBenedict Rochester,N.Y. Law gr., Palo Alto Hotel-p
A. B., Cornell, 1912.
Clark, Hazel Redlands Graph. 43, Madrono
Clark, Laura Cornelia San Jose Math. 44, 1022 Bird, SJ-sj
Clark, Louis Paul Palo Alto C. E. †4, 847 Ramona-p
Clark, Mabel Edith Redlands Bot. 46, Madrono
Clark, Mabel Irene Ventura Germ. 85, Langworthy Club
Clark, Melville Nathaniel Dayton, Me. E. E. 118, 82 Encina
Clark, Paul Archibald Stanford Univ. Hist. 21, 7 Alvarado
Clark,William Otterbein Milwaukee,Wis. Geol. gr., 904 Cowper-p
A. B., Stanford, 1906.
Clark, William Los Angeles C. E. 43, 133 Encina
Clattenburg, Herbert Alexander Eureka Phyl. 48, 89 Encina
Claussen, Thomas Hibben Sausalito C. E. 62, 177 Encina
[2]Clawson, James Imre Los Angeles Econ. 54, Delta Upsilon
[1]Clayton, James Bradley San Jose Econ. 8, Senol & Park, SJ
Cleveland, Maude Stanford Univ. Engl. gr., KappaAlphaTheta
B. L., California, 1909.
[2]Clifford, Mildred Elsie Burlingame Zool. †, Burlingame-b
Cline, George Willis San Jose Phyl.Med.105, 349N14,SJ-sj
Clithero, Electa Boise, Idaho Hist. 89, Delta Delta Delta
Close, Carlos Cooper Spokane, Wn. Law 80, Phi Kappa Psi
Clover, Philip Petrie Pasadena C.E. 84, DeltaKappaEpsilon
Clowe, Charles Edward Woodland Geol. 91, Phi Gamma Delta
Clowe, Virginia Woodland Hist. 12, Pi Beta Phi
Cluff, Alfred Thomas San Francisco Law 65, 83 Encina
Clute, Walker Stillwell Los Angeles Geol. †7, Alpha Tau Omega
Clyne, Marguerite Ocean Park Hist. †11, 30 Roble
Coates, John Sherwood Fresno Econ. 9, 25 Salvatierra
Coberly, Clarence James Los Angeles M. E. 35, Alpha Tau Omega
[1]Cochrane, Helen San Francisco Hist. 120, Langworthy Club
A. B., Stanford, 1913.

Cody, Mervyn Joseph	San Francisco	M. E. sp. 13, Cardinal Club
Coe, Harry Carson	San Jose	Phyl. 13, 4 Salvatierra
Coe, Wilbur F.	Glencoe, N. M.	PreL. 2, Mariposa Hotel-p
Coffin, Chester LeRoy	Reno, Nev.	Law gr., 83 Encina
A. B., Stanford, 1913.		
Coggins, Anna Passmore	Germantown, Pa.	Germ. 95, 19 Salvatierra
Coggins, Edith Irene	Germantown, Pa.	Engl. 62, 454 Hamilton-p
Cogswell, Elinor Valoy	Palo Alto	Engl. 9, 245 Emerson-p
Cole, Charles Arthur	Ventura	E. E. 84, Cardinal Club
[1]Coleman, Earl Hampton	Los Altos	Ent. gr., Los Altos-l
A. B., Stanford, 1906.		
Coleman, Emily Augusta	Tacoma, Wn.	Hist. 106, Alpha Phi
[2]Colley, Helen Marie	Los Gatos	Fr., 38 Roble
[2]Comings, Grace Lunt	San Mateo	Chem. †, 320 Elm, SM-sm
[1]Conant, David Jordan	San Jose	M. E. 59, 77 Encina
Cone, William Laurance	Springville, U.	E. E. 43, Peninsula Hosp-p
Conger, Guy Robert	Fresno	Econ. 8, 4 Salvatierra
Conklin, Harold Reese	San Diego	M. E. 29, 758 Waverley
Conkling, Julia H.	El Centro	Math. 42, Delta Delta Delta
Connell, George Albert	San Jose	Chem. 74, 151 Encina
Connelly, Stella Louise	Palo Alto	Hist. 12, 541 Cowper-p
Cook, Charles Franklin	Long Beach	PreL. 9, College Terrace
Cooke, John Daniel	Beloit, Kansas	Grk. 61, 4 Alvarado
Cookman, Grace Olive	Los Angeles	Educ. 67, 216 Emerson-p
Cookman, John Randolph	Los Angeles	Educ. 67, 216 Emerson-p
[1]Cookson, Harold Wesley	Palo Alto	Geol. 30, 465 University
Coombe, Ila Eloise	San Francisco	Hist. 86, Kappa Kappa Gam
Cooper, Dorothy Joan	San Francisco	Hist. 24, Kappa Kappa Gam
Cooper, Walter Haines	Los Angeles	Chem. 43, 39 Encina
Cooper, Warren Gosselin	Eureka	Geol. 100, 4 Encina
[1]Coppinger, Edward B.	Durango, Colo.	PreL. †, 181 Lytton
Corbet, Edward Burke	San Francisco	Geol. 121, Sigma Alpha Epsil
[1]Corneliussen, Oscar J.	St. Paul, Minn.	Econ. gr., College Terrace
Ph.B., Hamlin University, 1911; A.M., Washington University, 1912.		
Cornwall, Edward Augustus	Redlands	Ent. 71, 80 Encina
Cory, Margaret Esther	Fresno	Hist. 23, Kappa Kappa Gam
Cottrell, Joseph Paul	Colton	Law 95, 178 Encina
[1]Couch, John Daniel	Palo Alto	Geol. 8, 657 Webster-p
Courtney, Genevieve M.	Portland, Ore.	Engl. 104, 10 Roble
Cowan, Floyd Wellesley	Fresno	Law 77, Chi Psi
Cox, Anna Shipley	San Jose	Lat. gr., 855 Chapman, SJ-sj
A. B., Stanford, 1909; A. M., 1913.		

Cox, Catharine Morris San Jose Germ.gr., 855Chapman,SJ-sj
A. B., Stanford, 1912.
Cox, H. Ben San Jose Law 73, 77 Encina
Cox, Joel Bean Honolulu, T. H. C. E. 82, 51 Encina
Cox, William Edward Hillsboro, Tex. Econ. gr., 16 Salvatierra
A. B., Texas, 1909; A. M., 1910.
Coyle, Albert Freeman San Jose PreL. 64, 5 Lasuen
Cram, Clara East Highlands Engl. 79, Pi Beta Phi
Cramer, Margaret Palo Alto Germ. 38, 675 Channing-p
Crandall, Harriet Ruth Palo Alto Graph. 67, 737 Waverley-p
Crandall, Hector Stanford Univ. Chem. 102, 91 Encina
Crawford, James Porter San Jose Med. gr., 1436 Calif., SF-sf
A. B., Stanford, 1912.
Crellin, Ruth Pleasanton Hist. 104, Alpha Phi
Cressey, Josephine Modesto Germ. 106, Pi Beta Phi
[2]Crim, Georgia Estelle San Francisco Hist., Alvarado Hall
[1]Crippen, Ruth Melissa San Diego Hist. 123, Alpha Omicron Pi
A. B., Stanford, 1913.
Croft, Wellard Cameron Ouray, Colo. PreL. 2, Phi Delta Theta
Crook,Maude L'Anphere Stanford Univ. Engl. † 19, 22 Lasuen
Crosby, Clara Santa Cruz Zool. 100, 65 Roble
Cross, Donella Mary Mayfield Lat. gr., Mayfield-m
A. B., Stanford, 1910; A. M., 1911.
Crowley,Stanley Ansel Idaho Falls,Ida. M. E. 12, Pine Cottage
Crutchfield, Clara Alan San Francisco Engl. 115, Delta Delta Delta
[1]Cullen, Edward James Gilroy C. E. 149, 157 Encina
A. B., Stanford, 1913.
Cullen, John Francis Gilroy E. E. 109, 160 Encina
Culp, Dorothy Escondido Lat. 107, 62 Roble
[2]Cundiff, Stuart A. Riverside Bot. 3, Kappa Alpha
Cuneo, Irene Rose San Mateo Educ. 53, Alpha Omicron Pi
Current, Pauline Janette Red Key, Ind. Germ. 105, 667 University-p
Currier, Donald Locke Cupertino Ent. 43, Cupertino-c
[1]Currier, Ruth Leslie Cupertino Germ. 91, Cupertino-c
Curry, Mary Louise Palo Alto Grk. 15, 349 Hamilton
Curry, Walter Clyde Gray-Court, S. C. Engl. gr., 2 Lasuen
A. B., Woffard College, 1909.
Curtice, Louise Elizabeth Spokane, Wn. Hist. 65, Alpha Omicron Pi
Curtis, Lucile Rose Los Angeles Hist. 42, Alpha Omicron Pi
Curtis, Wallace Burdett Rochester,N.Y. M. E. 14, 357 Kingsley-p
[2]Cuthbertson, Ernest James Manchester Law unc., 625 Ramona-p
Cuzner,William Guenther Los Angeles PreL. 12, Delta Upsilon

Daniels, Arthur Howard	Redlands	PreL. 42,	Delta Chi
Daniells, Nina Carrie	Lindsay	Hist. 47,	49 Roble
Darling, Eliza Edington	Ventura	Graph. 14,	81 Roble
Darrow, Constance	Lewistown, Mont.	Lat. 73,	Pi Beta Phi
Darsie, William Pettigrew	Palo Alto	Econ. 76,	Phi Kappa Psi
Daugherty, Robert Long	Ithaca, N. Y.	M. E. gr.,	Ithaca, N. Y.
A. B., Stanford, 1909.			
[1]Davidson, Olive Marion	Colma	Hist. 120,	Alvarado Hall
A. B., Stanford, 1913.			
Davidson, Vera Lillian Bovina	Centre, N.Y.	Engl. 105,	Kappa Alpha Theta
Davies, Ivor J.	Evanston, Wyo.	M. E. 8,	521 Everett-p
Davis, Alexander	Pomona	Law 83,	Theta Delta Chi
Davis, Christopher Buggeln	Prescott, Ar.	Econ. 7,	136 Encina
Davis, Harry Bascom	Pomona	C. E. 111,	Theta Delta Chi
Davis, John Allen	Los Angeles	Law gr.,	Delta Kappa Epsilon
A. B., Stanford, 1912.			
Davis, Julian Ralph	Pomona	PreL. 43,	Theta Delta Chi
Davis, Kenneth Monroe	San Francisco	M. E. 13,	Theta Delta Chi
Davy, Donald	San Jose	Econ. 35,	Delta Kappa Epsilon
Davy, Dorothy	San Jose	Graph. 25,	Kappa Kappa Gam
Dawson, Don	Los Angeles	Hist. 30,	Beta Theta Pi
Day, Carl Edwin	Watsonville	Law 80,	155 Encina
Day, Donald McLain	Los Angeles	C. E. 3,	Cardinal Club
[1]Dayton, Leo Augustus	Salinas	PreL. 14,	Delta Chi
Dean, Geneva Jane	Corona	Math. 13,	80 Roble
Decius, Louis Courtney	Los Angeles	Geol. 81,	Zeta Psi
Denham, Charles Maurice	Arroyo Grande	C. E. 74,	58 Encina
Denhart, Harry John	San Jose	PreL. 8, 46	S. Priest, SJ-sj
Dent, Leslie Ferdinand	Winthrop	Econ. 19,	Beta Theta Pi
Detels, Martin Paul	Palo Alto	Law 64,	1055 Cowper-p
A. B., Santa Clara, 1912.			
Devaney, Leo Giles	Roseburg, Ore.	M. E.	196 Encina
DeVoto, Henry Ambrose	Sonora	Phyl. 10,	334 Waverley-p
Dietrich, Waldemar Fenn	San Francisco	Geol. 132,	59 Encina
[1]Di Fiore, Joseph	San Jose	Phyl.	106 N. 14th, SJ-sj
[1]Dillon, James Root	San Francisco	Med. gr.,	2597 Sutter, SF-sf
A. B., Stanford, 1908.			
Dimon, Asa Cyrus	San Jose	Econ. 76,	Delta Tau Delta
Dingley, Walter Frederick	Palo Alto	Chem. 14,	575 Keliogg-p
[2]Dishman, William E.	Collinsville, Tex.	Law unc., †,	2 Lasuen
Ditz, George Armand	Stockton	Law gr.,	105 Encina
A. B., Stanford, 1911.			

Dodd, John McKee	San Francisco	Chem. 73,	405 Emerson-p
Dodge, George Sinclair	Los Angeles	Econ. 40,	97 Encina
Dodge, John Wallace	Berkeley	C. E. 9,	19 Lasuen
Dodge, Walter Jennings	Los Angeles	E. E. 110,	97 Encina
[1]Doheny, Edward L., Jr.	Los Angeles	Geol. 1,	Beta Theta Pi
Donaldson, Lorna Grace	Palo Alto	Engl. 14,	751 Webster-p
Donnelly, Jennie Lindsay A. B., Stanford, 1911.	Truckee	Lat. gr.,	64 Roble
Dool, Donald George	Calexico	C. E. 45,	4 Lasuen
Dooling, Charles Wagner A. B., Stanford, 1912.	Hollister	Law gr.,	85 Encina
Dooling, John Thomas	Aurora, Ill.	Hist. 26,	Phi Kappa Psi
Dooling, Maurice Timothy, Jr. A. B., Stanford, 1912.	Hollister	Law gr.,	85 Encina
[2]Dorn, Camille	Menlo Park	Hist.,	Menlo Park-mp
Dorn, Marion Victoria	Menlo Park	Hist. 12,	Menlo Park-mp
[2]Dorr, Charles Sweeney A. B., College of Pacific.	San Jose	Educ. gr.,	706 Emory, SJ-sj
Dorroh, Terese Beatrice	Angels Camp	Engl. 11,	87 Roble
Doud, Dorothy Adele	San Francisco	Math. 10,	Gamma Phi Beta
Downing, Russell Forrest	Los Gatos	PreL. 29,	40 Encina
Downing, Samuel Robert A. B., Stanford, 1912.	Arcata	Med gr.,	2327 Sacra., SF-sf
Doxsee, Wilbur Harvey	Redwood	C. E. 132,	Redwood City-r
[2]Drake, Benjamin F.	Guerneville	Bot.,	148 Encina
Draper, Roscal Leroy	Arroyo Grande	Phyl.-Med. 99,	58 Encina
Driscoll, Marjorie Charles	Pasadena	Engl. 113,	60 Roble
Drury, Nan	San Diego	Hist. 38,	Kappa Alpha Theta
Dubendorf, Horace Hayes	Exeter	Geol. 4,	801 Waverley-p
[1]Dubendorf, John Hayes	Exeter	M. E. 59,	801 Waverley-p
Duernberger, Frank Roscoe	Sunnyvale	PreL. 44,	Sunnyvale-s
Duff, James Leo	Menlo Park	Graph. 102,	91 Encina
Duffin, Charles Greenlaw	Camas, Wn.	E. E. 101,	117 Encina
Dunham, Bertram Ray	Corona	Chem. 67,	525 Forest-p
Dunham, Cornelius Thomas	Salem, Mass.	Law. sp. unc. 73,	Phi Kap Psi
Dunipace, Gertrude Hilda A. B., Stanford, 1913.	Morgan Hill	Germ. gr.,	3 Salvatierra
Dunlap, David Porter	Douglas, Ariz.	PreL. 11,	147 Encina
Dunlap, Marjorie Louise	Hanford	Graph. 12,	88 Roble
Dunlap, Willard Everett	Los Angeles	Geol. †7,	Alpha Tau Omega
Dunlop, Florence Edetha	Vale, Ore.	Phyl.-Med. 105,	Langw. Club
Dunn, Henry Matthew	San Diego	PreL. 6,	Phi Gamma Delta

Dunn, Teresa Pauline	Monrovia	Hist. 68,	Langworthy Club
Dunnagan, Jesse Philips	San Jose	C. E. 63,	4 Lasuen
Dunphy, Nicholas Reed	Campbell	Graph. 41,	31 Encina
Dupuy, Florence Martha	Monrovia	Germ. 79,	30 Roble
Durgin, Eva Lillian	Cupertino	Educ. 74,	Cupertino-c
Durgin, Rubie Mae	Cupertino	Phyl. 77,	Cupertino-c
Durst, Harold Douglass	Sunnyvale	Law sp. unc. 46,	Sunnyvale-s
Duryea, Margaret	Palo Alto	Econ. 37,	308 Lincoln-p
Duryea, Robert Francis	Palo Alto	C. E. 111,	Delta Upsilon
Dutton, Earl Treff	Los Angeles	Educ. 35,	36 Encina
[1]Dyer, Charles Thomas	Seattle, Wash.	Law sp. unc.,	4 Salvatierrra
Dyer, Thomas Lafayette	Alva, Okla.	Law 84,	96 Encina
Dykes, Earl Taylor	Stafford, Kans.	Phyl. 10,	347 Ramona-p
Easterday, Robert Oscar	Palo Alto	Chem. 11,	578 Lowell-p
Eastey, Julia Mildred	San Jose	Hist. 109,	Madrono
Eaton, Alma Martha	Salinas	Span. 38,	Alpha Omicron Pi
Eaton, Ernest Wolfe	Los Angeles	Hist. 11,	129 Encina
Edwards, Alfred Rice	Palo Alto	Law 54,	707 Melville-p
Edwards, Edward W.	Santa Barbara	C. E. sp. 12,	75 Encina
Edwards, Elizabeth	Palo Alto	Hist. 8,	707 Melville-p
Egbert, Dorothy Barnes	San Francisco	Graph. 24,	Alpha Phi
Ehrenclou, Alfred Hjalmar	Redlands	Phyl.-Med. 87,	SanFran.-sf
Eigenmann, TheodoreS.	BloomingtonInd	Econ. 1,	199 Encina
Elden, John Francis, Jr.	Los Angeles	PreL. 16,	4 Lasuen
Elliott, Charlotte A. B., Stanford, 1907.	Dell Rapids, S. D.	Bot. gr.,	Alpha Phi
Elliott, Christabel	Stanford Univ.	Engl. 15,	5 Cabrillo
Elliott, Harold Farley	Prescott, Ariz.	M. E. 11,	194 Encina
[2]Ellias, Laura Lillian	Tropico	Engl. 54,	9 Roble
Ellis, Lona Evelyn	Pacific Grove	Graph. 85,	Mariposa Club
Ellis, Leon	Spokane, Wn.	Law 73,	Delta Tau Delta
Elsey, Howard McKee	Modesto	Chem. 84,	10 Encina
Emery, Rose Frances	San Jose	Educ. 74,	11 Roble
Emmons, Marjorie Florence	Alameda	Hist. 78,	Kappa Kappa Gam
Enderle, Maurice Frank A. B., Stanford, 1912.	Santa Ana	Law gr.,	7 Encina
Endersby, Victor Arthur	Ukiah	C. E. 48,	College Terrace
English, Henry Rowland	Shelby, N. C.	Educ. 14,	College Terrace
Enke, Melinda	Portland, Ore.	Lat. 12,	Delta Gamma
Erb, Arthur Leslie	Chemainus, B. C.	PreL. 42,	Sigma Alpha Ep
Erb, Benjamin Edward	Chemainus, B.C.	Geol. 99,	Sigma Alpha Ep

Erickson, John Mitchell Medford, Wis. Law unc. 4, Acacia
Erwin, Lewis Brown Kalamazoo, Mich. E. E. 76, 167 Encina
Esaki, Ko Berkeley E. E. 49, Japanese Club
Escobar, Pedro James San Salvador, C.A. Law 47, Theta Delta Chi
Eustace, Marie Genevieve Pacific Grove Germ. 76, Langworthy Club
Evans, David Lloyd, Jr. Malad, Ida. E. E. gr., 19 Encina
Ph. B., Utah, 1911.
Evanson, Clayton Eugene Spokane, Wn. PreL. 42, Cardinal Club
Everett, Eileen Erica Orange Hist. 73, Alpha Omicron Pi
[1]Everly, Vera Leona Nampa, Ida. Engl. 83, Mariposa Club
Everson, Susie May San Francisco Germ. 40, 310 High-p
Eyer, Marguerite Knowlton Los Angeles Hist. 107, Alpha Phi
Fairclough, Katrine Rushton Stanford U. Hist. 76, Kappa Alpha Theta
Faitoute, Florence Benedict Hanford Engl. 14, 85 Roble
Fall, Mary Rebecca Los Angeles Hist. 8, 21 Roble
[1]Falor, Richard Irvin Eureka Law 69, 102 Encina
[2]Farrell, Amy L. Salt Lake City, Utah Fr. †, 38 Roble
Farris, Fauna Wynne Palo Alto Engl. sp. 16, 315 Everett-p
Faubel, Grace San Francisco Hist. 107, 4 Madrono
[1]Fawcett, Percy Douglas Tacoma, Wn. Law 123, Theta Delta Chi
A. B., Stanford, 1913.
Ferguson, Bessie Lee Colfax, Wn. Engl. 71, 1098 Emerson-p
[1]Ferrel, Clyde Bruce Walla Walla, Wn. E. E. sp. 31, 320 Ramona-p
Ferris, Gordon Floyd Modesto Ent. 9, 4 Salvatierra
[1]Fertig, Emmet Ross Noblesville, Ind. Law gr., Phi Kappa Psi
B. L., California, 1910; J. D., Stanford, 1913.
[1]Finch, Robert McMaster Los Angeles Engl. 75, Chi Psi
Finch, Wade Thomas Los Angeles PreL. 9, Chi Psi
Finney, Florella Kelso Modesto Phys. 81, 6 Madrono
Finney, Mabel Consuelo Modesto Phyl. 71, 21 Madrono
Finney, Wallace Rolland Modesto M. E. gr., 12 Encina
A. B., Stanford, 1913.
Fisher, Albert Bernhardt Salt Lake C., U. PreL. 10, Phi Kappa Psi
Fisher, Elizabeth Grace Elgin, Ill. Zool. gr., 64 Roble
A. B., Wheaton College, 1910.
Fisher, Hazel Annette Fresno Fr. 7, Pi Beta Phi
Fisher, Hazel Margreate Penryn Germ. 15, 85 Roble
[1]Fisher, Marshall Weston Mt. View Educ. gr., Mt. View-mv
A. B., Stanford, 1910.
[2]Fisk, Mary Los Angeles Zool. 115, Delta Gamma
Fithian, Robert Graham Portland, Ore. PreL. Zeta Psi
[2]Fitzgerald, Harold John Vallejo Engl., 4 Salvatierra

Fitzhugh, James McClurg — Los Angeles — C. E. 11, — 121 Encina
Flack, Augustus Sloan — Los Angeles — PreL. 41, — Delta Chi
[1]Flagg, Lenora Enid — San Jose — Engl. gr., Kappa Kappa Gam
A. B., Stanford, 1910.
Flatau, Elsa — Los Angeles — Educ. 62, Alpha Omicron Pi
Fleming, Clarence Edwin — Los Angeles — Law 112, — 39 Encina
Flint, Arthur Percy — Stockton — PreL. 26, Sigma Alpha Epsil
Flint, John Donovan — Palo Alto — PreL. 21, — 841 Bryant-p
Floodberg, Ralph Arnold — San Francisco — PreL. 10, Phi Gamma Delta
Flores, Gabriel P. — Manila, P.I. — Med.gr., 947 Gdn Gate,SF-sf
Ph. D., Chicago.
Flügel, Felix — Palo Alto — Econ. 74, — 1153 Cowper-p
Flynn, Francis — North Platte, Nebr. — E. E. 34, — 3 Encina
[2]Fong, Mon Charles — Canton, China — C. E. sp., — 318 Emerson-p
Forbes, Frederick B. — Albuquerque, N.M. — Geol. 85, — 184 Encina
Forbes, James Hyde — Los Angeles — Geol. 96, — Delta Upsilon
Forbes, Margaret Irving — Palo Alto — Germ. 7, — 1527 Waverley-p
Forbes, William Boomer — Los Angeles — PreL. 40, — Delta Upsilon
Ford, Edwin Hopkins — Minneapolis, Minn. — Engl. 66, — Kappa Alpha
Fore, Harry A. — San Jose — E. E. 89, — Los Altos
[1]de Forest, Clara Marie — Palo Alto — Germ. 26, 950 University-p
Fortin, Adele Julie — Los Angeles — Educ. 72, — Delta Gamma
[2]Foss, Henry Osander — Tacoma, Wn. — Econ., — Sigma Chi
[1]Foster, Arthur A. — Philadelphia, Pa. — Engl. sp., — 1044 Bryant-p
Foster, Frederick Leland — Corona — Law 91, — 115 Encina
Foster, George Leroy — Tacoma, Wn. — Law 102, — 182 Encina
Foster, Marjorie Greene — San Rafael — Chem. 80, — Madrono
Foulke, Charles Leslie — Rialto — C. E. 75, — 169 Encina
Fout, Edmond Eugene — Palo Alto — Chem. 5, — 1021 Cowper-p
Fowler, Frederick Hall — Palo Alto — C. E. gr., — 221 Kingsley-p
A. B., Stanford, 1905.
Fowler, Harry Clarence — Paso Robles — C. E. 47, — 76 Encina
Fox, Byron Parlier — Palo Alto — Geol. 8, — 825 Cowper-p
[1]Franceschi, Franco E. — Santa Barbara — C. E. 35, — 136 Encina
Frank, Alvin H. — Los Angeles — Econ. 101, — 64 Encina
[1]Franklin, Minnie Edith — San Jose — Educ. †, 260 Latawana,SJ-sj
Frary, Gladys May — San Diego — Educ. 70, Delta Delta Delta
[2]Frasier, Thomas T. — Bridgeport, Ohio — Law gr., — 375 Everett-p
B. S., Pennsylvania, 1912.
Freeman, Stuart — Portland, Ore. — PreL. 5, — Zeta Psi
French, Annie Cordelia — San Jose — Hist. 61, Kappa Kappa Gam

Freuler, Beatrice Elizabeth Berkeley Psych. 91, Alpha Omicron Pi
[1]Fritsch, Rudolph Hermann Palo Alto Engl. 7, 831 Kipling-p
[1]Frost, Marion LeRoy Redlands PreL. 27, Delta Chi
Funsten, Betty Glover San Francisco Hist. 72, Kappa Kappa Gam
[2]Furst, Elise Paul San Jose Phyl. †, 840McKendric,SJ-sj
Fyfe, Andrew Douglas Oceanside Geol. 105, Delta Upsilon
Gabine, Bernhard Zurich, Switzerland Phil. 9, 275 Hamilton-p
Gamble, Florence Hanford Graph. 65, Pi Beta Phi
Gamble, Launcelot John Palo Alto M. E. 56, Phi Delta Theta
Gard, Edith Nellie Salt Lake City, U. Educ. 19, 28 Roble
Gard, Frank Jacob Glendora Chem. 70, Phi Gamma Delta
Gard, Mary Carolyn Glendora Hist. 40, Alphi Phi
[2]Gardiner, Joyce Ada Santa Barbara Educ. †, 72 Roble
Gardner, Sydnie Aileen Orange Math. 108, Madrono
Gardner, William L. Campbell Chem. 12, 65 Encina
Garlinghouse, Albert Frederick San Jose C. E. 73, R. R. 2, SJ-sj
Garst, Delta Avis Riverside Educ. gr., Delta Delta Delta
A. B., Stanford, 1912.
Garver, Jean Juliette Des Moines, Ia. Germ. 67, Delta Gamma
[1]Gassaway, Gordon Los Angeles Engl. 122, Kappa Alpha
Gates, Charles Clifford Pasadena Engl. 3, Phi Gamma Delta
Gates, Florence Mabel So. Pasadena Fr.39, Kappa Kappa Gamma
Gates, Fred Herbert So. Pasadena Hist. 43, Phi Gamma Delta
[2] Gearhart, William Edgar Batavia, Ia. Law gr., 653 Melville
A. B., Iowa, 1913.
Gehrmann, Wm. Conrad Davenport, Ia. Geol. gr., Phi Gamma Delta
A. B., Stanford, 1913.
Geppert, Ralph Clinton Palo Alto E. E. 79, 319 Alma-p
Gerwin, Vera Marian Redwood City Hist. 65, Redwood City-r
Gibb, James Albert Aiea, Hawaii M. E. 36, Phi Kappa Psi
Gibbel, Naum Winfield Carthage Mo. M. E. 27, 144 Encina
Gibson, Eric John L. Melbourne, Aust. C. E. †43, 10 Alvarado
Gilbert, Carl Hughes Palo Alto Law 103, 64 Encina
[2]Gilbert, Ramon A. San Francisco Med. †, 3987 18th, SF-sf
Gilchrist, Margaret Josephine San Jose Engl. 74, Kappa Kappa Gam
Gill, Gerald Forbes Palo Alto C. E. 32, 400 Pope-p
Gillespie, Paul Shaffner Anoka, Minn. Econ. 9, 454 Homer-p
[2]Gillelen, Lute G. Los Angeles PreL., Kappa Sigma
Gilliland, Otho James Altoona, Penn. Bot. 10, 107 Encina
Girdner, Margaret Virinda Sacramento Hist. 52, Mariposa Club
Glass, William Winslow Pasadena C. E. 77, Theta Delta Chi

Gleason,RutherfordErwin	Stanford U.	Math. 73,	15 Salvatierra
Gleiss, Frank Julius	Los Angeles	E. E. 108,	119 Encina
Gober, Helen Porter	Los Gatos	Chem.106,	KappaKappaGam
Goddard, Win Rawdon	Conneaut, O.	Chem. 89,	407 Waverley-p
[2]Goes, Frederic Theo.	Milwaukee, Wis.	M. E. sp.,	4 Lasuen
Goldsmith,ArthurAbraham	LosAngeles	PreL. 11,	107 Encina
Good, Roy Milton	Marshalltown, Ia.	Econ. 58,	Cardinal Club
Goodan, Roger	Los Angeles	Hist. 103,	128 Encina
Goodman, John Harvey	Berkeley	PreL. 5,	DeltaKappaEpsilon
[1]Goodwin, Clarence Bernard A. B., Stanford, 1913.	Sunnyvale	C. E. 147,	Sunnyvale-s
Goodwin, William John	Sunnyvale	C. E. 105,	Sunnyvale-s
Goplerud, Clifford Peter	Osage, Ia.	C. E. 71,	Kappa Alpha
Goss, Hazel Stevenson	Denver, Colo.	Math. 76,	84 Roble
Gower, Frances Anna	Los Angeles	Lat. 111,	54 Roble
[1]Grace, Charles Stewart A. B., Stanford, 1913.	Rivera	C. E. 129,	121 Encina
Gragg, Alden Orville	San Luis Obispo	Econ. 84,	Theta Delta Chi
Graham, Frances Boswell	Pomona	Hist. 48,	KappaAlphaTheta
Graham, Helen Marie	Palo Alto	Grk. 12,	215 Fulton-p
Graham, Marguerite	Riverside	Educ. 104,	Delta Gamma
Grau, Fritz Seymour	Sacramento	Econ. 28,	Sigma Nu
Graves, John Maddux	San Francisco	Phyl. 20,	Chi Psi
Graves, Olin Wright	Bostonia	Math. 40,	832 Kipling-p
Gray, Agnes Kendrick	Palo Alto	Fr. 41,	430 Kingsley-p
Greef, Bessie Letitia A. B., Parsons College, 1911.	Fairfield, Iowa	Lat. gr.,	611 Waverley-p
Green, Boynton Morris	Redlands	M. E. 76,	171 Encina
Green, Carol Mary	Pasadena	Econ.79,	Kappa Alpha Theta
Green, Hazel Elizabeth	Stanford U.	Econ.80,	Kappa Alpha Theta
Green, Karl	Enid, Oklahoma	Engl. 105,	Cardinal Club
Green, Sidney Sherwood	Long Beach	Law 69,	Delta Chi
Green, Waldron A.	Pasadena	Geol. 9,	31 Salvatierra
[2]Greene, Virginia Eleanor	San Francisco	Econ.,	38 Roble
Greenfield, Lieurena Cole	St. Helena	Engl. 108,	28 Roble
Greenwood, Mabel	Princeton, Ill.	Germ. 100,	Alpha Phi
Gregg, John Price	Portland, Ore.	Law 105,	Cardinal Club
Gregory,Alfred Craven	San Francisco	C. E. 45,	Beta Theta Pi
Grepe, John Stanley, Jr.	E. Highlands	C. E. 110,	Sigma Nu
Griffin, Roscoe Wadsworth A. B., Stanford, 1913.	Vallejo	Law gr.,	158 Encina

Grinnell, Joseph — Pasadena — Zool. gr., — 2543 Durant,Berk.
A. B., Throop Polytechnic Institute, 1897; A. M., Stanford, 1901.
Gross, Wilmer Jackson — San Jose — PreL.10, — DeltaKappaEpsilon
[2]Grounds, Effie — Fresno — Hist., — 83 Roble
[1]Guerena, Frank Louis — Sonora — Law gr., — 105 Encina
A. B., Stanford, 1911; J. D., 1913.
Gulling, Grace Eleanor — Fallon, Nev. — Graph. 93, — 460 Homer-p
Gunn, Milton Curtiss — Helena, Mont. — PreL. 9, — 18 Alvarado
Gunnell, Dorothy P. — Salt Lake C., U. — Span. 72, — 19 Madrono
[2]Gutekunst, William Fredrick — Palo Alto — Phyl. sp., — 127 Lytton-p
Guthrie, Esther Lee — Woodland — Educ. 40, — 57 Roble
Guthrie, Stanley Walter — Los Angeles — Law 99, — Delta Upsilon
de Haas, Jacob Anton — Los Altos — Econ. gr., — Los Altos-1
A. B., Stanford, 1910; A. M., Harvard, 1911.
Hackett, Harold Arthur — San Diego — M. E. 83, — 173 Encina
Hadden, Fannie — Palo Alto — Phyl. 11, — 1157 Ramona-p
Hagen, Milton Abel — Los Angeles — Econ. 27, — 82 Encina
Hager, John Manfred — Los Angeles — Educ. 41, — 36 Encina
Haggart,Gilbert Edmund — Durango,Col. — Phyl. 43, — Delta Upsilon
Hagman, George Lewis — Louisville, Ky. — Med. gr., — 1348 Haight,SF-sf
B. S., Purdue, 1907.
Hahn, Herbert Leonard — Pasadena — PreL. 6, — 197 Encina
Haight, Marjorie Buell — Alameda — Hist. 59, — Delta Gamma
[1]Hails, Raymond Richard — Sta.Barbara — Econ. 121, — Phi Delta Theta
A. B., Stanford, 1913.
Halcombe, Norman M. — San Francisco — C. E. gr., — 111 Encina
A. B., Stanford, 1913.
Hall, A. Juilliard — Pasadena — Econ. 105, — 753 Channing-p
Hall, Elwin Benoni — Nordhoff — Geol. 62, — Beta Theta Pi
Hall, Jessie Mary — Alameda — Hist. 84, — Delta Gamma
Hall, Muriel E. — San Mateo — Graph. 16, — San Mateo-sm
Hall, Mortimer Louis — Pasadena — Geol. 158, — 753 Channing-p
Halm,Arthur Gainsford — Phoenix,Ariz. — Econ. 82, — Delta Upsilon
Hamaker, Rex Gerome — Los Angeles — C. E. 10, — 22 Encina
Hamilton, Frederick C. — Cranford,N.J. — Engl. 44, — 122 Encina
Hamlin, Thornton — Pasadena — C. E. 13, — Chi Psi
Hammel, John Calvin — Ontario — PreL. 45, — 33 Encina
Hammon, Wendell C. — San Francisco — Geol. 90, — Phi Delta Theta
Hammond, Clarence Bray — Palo Alto — Econ. gr., — 321 Alma-p
A. B., Stanford, 1912.
Hammond, Walter J. — Grinnell, Iowa — E. E. gr., — 170 Encina
B. S., Iowa College, 1911.

Hanawalt, FrankBarrett,Jr.	Los Angeles	Econ. 98, Alpha Tau Omega
Hanna, Amy Margaret	Pasadena	Frn. 20, Kappa Alpha Theta
Hanna, Gladys	Long Beach	Hist. 39, Kappa Kappa Gam
Hannibal, Harold Briggs	San Jose	Geol. 122, 133 Encina
Haraguchi, Tomiichi	Nagasaki, Japan	E. E. 110, Japanese Club
Harbaugh, Ross Wallace	Palo Alto	Med.gr., 2327 Sacram. SF-sf
A. B., Stanford, 1909.		
Harding, Edwin Reginald	San Bern.	Chem. gr., 177 Encina
A. B., Stanford, 1913.		
Harding, Hal Calvin	Los Angeles	C. E. 83, Alpha Tau Omega
[1]Hardy, Olive	Palo Alto	Math. 90, Mariposa Club
[2]Harkins, Paul Franklin	Ashland, Ohio	Chem., Alpha Tau Omega
[1]Harlow, Bessie Pauline	Bremerton,Wn.	Engl. 71, Alpha Phi
Harper,William Alexander	Santa Cruz	C. E. 12, 18 Alvarado
Harrier, Alice Miriam	Palo Alto	Engl. 70, 1400 Waverley-p
Harrigan, John Hand	Los Angeles	E. E. 73, Beta Theta Pi
[1]Harrigan, Philip Frederick	Los Angeles	Econ. 37, Beta Theta Pi
Harrington, Leo W.	Tonopah, Nev.	PreL. 3, 196 Encina
Hart, Harry Pendleton	So. Pasadena	C. E. 11, 43 Encina
Hartwell, Hazel Louise	San Diego	Hist. 10, Alpha Omicron Pi
Hartwig,George Herman	Kendall,N.Y.	Engl. 105, 620 Waverley-p
Harvey,Henry Rakestraw	Phoenix,Ar.	PreL. 8, 79 Encina
[1]Haslett, Samuel M.	Alameda	Hist. 126, Beta Theta Pi
A. B., Stanford, 1913.		
Hastings, Warren	San Jose	E. E. 86, Alpha Tau Omega
Hatch, Chesley Warde	San Jose	PreL. 12, Delta Tau Delta
Hatfield, George Juan	Oakland	Law gr., 608 Kingsley-p
A. B., Stanford, 1911; A. M., 1912.		
Haub, Alma Anita	Santa Rosa	Phys. 77, 39 Roble
Hawkins, Effie Izah	Palo Alto	Educ. 9, 313 Waverley-p
Hawkins, Sam Miller	Watsonville	Econ. sp. 32, 131 Encina
Hawley, Donald Adams	Oakland	M. E. 5, Sigma Nu
Hawley, George W.	Portland, Ore.	C. E. 112, 55 Encina
Hawley, Henry James	Portland, Ore.	Geol. 10, 157 Encina
Haydock, Evelyn Gladys	San Jose	Math. 14, 487 N. 5th, SJ-sj
Hayes, Allan Sidney	Pasadena	Geol. 10, Zeta Psi
Hayes, Casey Hewitt	Lemon Grove	Hist. 113, Phi Gamma Delta
Hayes, Elystus Lyon	Edenvale	PreL. 10, Phi Delta Theta
Hayes, Francis William	Cupertino	Geol. 54, Cupertino-c
[1]Hayes, Harold Cecil	Edenvale	Econ. 33, Delta Tau Delta
Hayes, Jesse Ernest	Campbell	C. E. 82, 130 Encina

Hayes, Percy	Bakersfield	Chem. 15,	121 Encina
Hazzard, Helen Greta	Whittier	Span. 76,	Delta Gamma
Heath, John	Palo Alto	Hist. 53,	382 Lincoln-p
Heckler, Ruby May K.	St. Marys, O.	Hist. 105,	30 Madrono
Hefflefinger, Orval Jewel	Tulare	PreL. 9,	19 Lasuen
[2]Heller, Walter D.	Menlo Park	Econ.,	Menlo Park
Helmick,Grace Raymond	Helena, Mont.	App. Math. 106,	GamPhiBeta
Helwagen, Carl Wilhelmj	Circleville,O.	M. E. 74,	Encina
Hempl, Elsa	Stanford University	Germ. 60,	8 Cabrillo
Hempl, Hilda	Stanford University	Zool. 73,	8 Cabrillo
Henderson, Edward	Santa Paula	PreL. 43,	8 Encina
Henderson, Hugh Murphy	Palo Alto	M. E. 60,	551 Addison-p
Henderson, John T.	Portland, Ore.	Hist. 38,	415 Lytton-p
Henning,Marbry Thurber	El Paso,Tex.	Math. 78,	Alpha Phi
Henningsen,Kathleen G.	Glenbrook,Nev.	Zool. 78,	Delta Delta Delta
Herrick, Florence South	Medford, Ore.	Engl. 70,	31 Roble
Herring, John Lehman	Long Beach	Econ.30,	91 Encina
Herron, Laura Elizabeth	Palo Alto	Educ. 72,	105 Emerson-p
Hettinger, Albert John Jr.	Fowler	Hist. 9,	1080 Emerson-p
Heynemann, George	San Francisco	PreL. 70,	25 Encina
Hickman,Carlton Manville	Sacramento	Econ. 13,	Delta Tau Delta
Higgins,Archibald William	Hockley,Eng.	E. E. sp. 88,	601 Melville-p
Higgins, Preston Leroy	Cupertino	PreL. 34,	Theta Delta Chi
Higgins,Robert Valentine	Santa Maria	Engl. 16,	1a Alvarado
Higgins, Sydney Marshall	Los Angeles	Hist. 107,	Beta Theta Pi
Hilby, George R.	Monterey	Geol. 73,	157 Encina
Hill, Charles Albert	Moline, Kans.	Econ. 95,	2 Lasuen
Hill, Clarence Sylvester	Parma, Idaho	Law 69,	171 Encina
Hills, Harry Sawyer	Oroville	PreL. 4,	4 Salvatierra
Hilton, Frank Howard	Portland, Ore.	Law gr.,	Delta Chi
A. B., Stanford, 1911.			
Hind, Oswald Arthur	Kohala, Hawaii	Econ. 37,	Phi Kappa Psi
Hindle, Dorothy Marian	Del Mar	Math. 108,	55 Roble
Hinds, Joel Henry	Porterville	C. E. 25,	359 Emerson-p
[1]Hinze, Clara	Los Gatos	Germ. gr.,	Los Gatos-1
A. B., California, 1912.			
Hirasawa, Teru Hico	San Francisco	C. E. 44,	1 Lasuen
Hiratsuka, Saburo	Los Angeles	Econ. 9,	Japanese Club
Hitchcock,JeannetteMcC.	Tacoma,Wn.	Frn. 44,	4 Madrono
Hitchcock, Ruth Howe	Santa Barbara	Germ. 52,	6 Roble
[1]Hively, Vera Grayce	Coalinga	Engl. 13,	27 Madrono

Ho, Nai Shing	Canton, China	Econ. sp. 35,	318 Emerson-p
Hobson, Celesta	San Jose	Graph. 14,	324 Emerson-p
[2]Hodges, George Charles	Palo Alto	Hist.,	453 Channing-p
Hoefgen, Lena Brooks	Palo Alto	Graph. 11,	221 Byron-p
Hoernig, Ottilie Katharine	Mt. View	Germ. 45,	Mt. View-mv
Hoffman, Alice Maye	Los Angeles	Engl. 75,	Madrono
Hoffman, Clara Louise	Chicago, Ill.	Bot. 96,	61 Roble
Hoffman, Henry Ray	Los Angeles	Econ. 76,	179 Encina
[1]Hofstettler, Grace Elizabeth	Lyons, Ia.	Engl. gr.,	Delta Gamma
A. B., Wisconsin, 1910.			
Hogg, Elton Marion	Saratoga	Chem. gr.,	Acacia
A. B., College Pacific, 1912.			
Hoisholt, George Greiersen	Oakdale	Hist. 65,	60 Encina
Holbrook, Lettie DeVoe	Portland, Ore.	Hist. 94,	324 Emerson-p
Holcomb, Clare	Boise, Idaho	Hist. 10,	Mariposa Club
Holcomb, Grant	San Bernardino	Law gr.,	Delta Chi
A. B., Stanford, 1911.			
Holden, Henry A.	Ticonderoga, N. Y.	Geol. 31,	454 Hamilton-p
Holditch, George Edward	Orange	E. E. 110,	100 Encina
Holeman, George Stevenson	Riverside	Phyl.-Med.	114, 176 Waverley
Hollister, Felton Stow	San Luis Obispo	Phyl. 9,	Phi Delta Theta
Hollmann, Esther Karleene	San Jose	Phyl. 9,	12 Roble
Holloway, Godfrey Ernest	Helena, Mont.	M. E. 10,	4 Salvatierra
[2]Holmes, Alma	Los Angeles	Engl. gr.,	20 Madrono
A. B., Stanford, 1912.			
Holmes, Henry Perry	San Francisco	M. E. 8,	620 Waverley-p
Holt, Inezetta	Redding	Hist. 72,	130 Fulton-p
Holverson, Frederick A.	San Diego	M. E. 10,	Kappa Alpha
[1]Hook, Joseph Stanley	Perris	Geol. gr.,	Ithaca, N. Y.
A. B., Stanford, 1910.			
Hooker, Ora Whitley	Riverside	Educ. 43,	San Carlos-s
Hopwood, Clyde Charles	Palo Alto	C. E. 25,	730 Hamilton-p
Hopwood, Margaret Bradfield	Riverside	Educ. 99,	55 Roble
Horine, Theo. Marguerite	Palo Alto	Engl. 65,	270 Kellogg-p
Horiuchi, Shigehito	Yamanashi Ken, Jap.	E. E. 78,	131 Cowper
Horton, Helen Clifford	Pasadena	Germ. 92,	27 Roble
Horton, Norval Townsend, Jr.	Pasadena	Hist. 102,	56 Encina
Hough, Mabel Robb	No. Yakima, Wn.	Lat. 9,	1134 Emerson-p
Houghton, Harold Clemans	Berkeley	Econ. 6,	451 Addison
Houghton, Harry Sumner	Santa Cruz	M. E. 98,	Kappa Sigma
Howard, Emily	Stanford University	Hist 15,	12 Dolores
Howard, Vivian Mildred	Palo Alto	Engl. 73,	170 Bryant-p

Howe, Mollie Margaret Chicago, Ill. Lat. 87, 527 Emerson-p
Howell, Bertha Blanchard Evanston, Ill. Phys. gr., 33 Salvatierra
A. B., Northwestern, 1912.
[1]Howell, John Wesley Los Angeles Law gr., Encina
A. B., Stanford, 1912.
Howes, John Gaylord Caney, Kans. Hist. 81, 555 Lytton-p
Hudson, Elmer Franklin San Jose C. E. 69, Theta Delta Chi
Hudson, Frederick Ross Watsonville Econ. 105, Acacia
Hughes, Glenn Arthur Long Beach Educ. 12, Cardinal Club
[1]Hughes, Harold A. Dorchester, Mass. Psych. †34, 46 Encina
Hughes, John E. Tucson, Ariz. Econ. 33, Encina
[2]Hughes, LaFayette Ritter Los Angeles Graph. sp., 4 Lasuen
Huiskamp, Henry Christian Keokuk, Ia. Econ. 86, Phi Gamma Delta
Hulsman, Evelyn Clara Susanville Engl. gr., Mariposa Club
A. B., Stanford, 1912.
Hulsman, Ivan M. Susanville Geol. 35, 18 Alvarado
Humphries, George Rolph Palo Alto Grk. 70, 521 Everett-p
Humphry, Cora Viola Cupertino Hist. 75, Cupertino-c
Hunley, John Berdell Newton, Wash. Geol. 77, 147 Encina
Hunt, George Walter San Jose C. E. sp. 115, 71 Encina
[1]Hunt, Jessimine Mabelle Corona Engl. 8, Delta Delta Delta
Hunt, Marcie Fannie Corona Graph. 44, Delta Delta Delta
Hunter, Frank Caughey Pasadena Geol. 5, Phi Gamma Delta
Huntington, Frances Los Altos Engl. 25, Los Altos-l
Hurd, Helen Josephine Los Angeles Engl. 71, Pi Beta Phi
Hurd, Joseph D. Salt Lake City, Utah Law 101, 170 Encina
Hurley, Cornelius Bert Phoenix, Ariz. E. E. 38, Sigma Nu
Hurley, Morris Elmer Albion Germ. 42, 310 High-p
Hutchinson, Edith May Los Angeles Hist. 93, Gamma Phi Beta
Hutchinson, George Minneapolis, Minn. Econ. 42, Cardinal Club
Hutchinson, James Sloan Palo Alto Econ. 17, 403 Kingsley-p
[2]Hutchinson, Katharine Palo Alto Germ. 18, 403 Kingsley-p
[1]Hutchinson, Ruth Los Angeles Hist. 124, Gamma Phi Beta
Hutchinson, William N. L. Palo Alto Bot. 37, Phi Kappa Psi
Hyatt, Victor Sacramento PreL. 12, 42 Encina
Hyndman, Elizabeth Wyoming, Ohio Engl. 107, Delta Delta Delta
Ide, Corson William Los Angeles PreL. 12, 4 Lasuen
Ingelow, George Carpenter Banning Hist. 70, Acacia
Ingraham, Irving I. Bristol, Conn. Hist. sp. 89, Delta Kap Epsil
Inslee, Edward Herbert Niagara Falls, N.Y. Phys. sp. 21, 437 Bryant-p
[2]Irelan, Elma C. Monterey, Mexico Educ. gr., 324 Emerson-p
B. S., Washburne College, 1903.

Ireland, Edith McCoy	Los Angeles	Hist. 59, Gamma Phi Beta
[1]Ireland, Florence	Los Angeles	Hist. 32, 530 Melville-p
Irwin, Clifton Minto	Portland, Ore.	C. E. 11, Chi Psi
Isakson, Carl Oscar	Portland, Ore.	C. E. 84, 44 Encina
[2]Ito, Chonosuke	Tokio, Japan	Econ. sp., Japanese Club
Jack, Julian Riette	Glendale	C. E. 95, Theta Delta Chi
[1]Jackson, Beatrice Anna	Napa	Hist. 4, 12 Roble
Jackson, Edgar Alden	Lawrence	E. E. 106, Lawrence
Jackson, Edna LaVone	Boise, Idaho	Engl. 87, Delta Delta Delta
Jacob, Lina Stella	Palo Alto	Germ. 75, 801 Middlefield-p
Jacomini, Gustave Adolph	Pasadena	M. E. 45, 134 Encina
Jameson, Bernice	Corona	Chem. 59, 63 Roble
Jameson, Emily Dean	Corona	Hist. 44, 72 Roble
Jameson, Irene Evelyn	San Diego	Hist. 78, Mariposa Club
Jeffers, James Sterling	Los Angeles	C. E. 43, Delta Upsilon
Jeffers, Paul Eells	Los Angeles	C. E. 111, Sigma Alpha Epsil
Jenkins, Leonard R.	Ogden, Utah	Phyl.-Med. 107, 29 Encina
Jenkins, Olaf Pitt	Stanford University	Geol. 109, 3 Lasuen
Jensen, Ray Carl James	Fowler	Germ. 9, Campus School
Jessup, Robert Junior	Vincennes, Ind.	Econ. 12, Phi Kappa Psi
Job, Martha Judith	Mountain View	Engl. 60, Mountain View-my
Johns, Arthur Wesley	Sonora	Econ. gr., 515 Waverley-p
A. B., College Pacific, 1912.		
Johnson, Arthur Lockwood	San Jose	PreL. 12, 381 N. 12th, SJ-sj
Johnson, Frances Mary	San Jose	Engl. 71, 447 N. 2nd, SJ-sj
[1]Johnson, Frederick M.	San Francisco	Hist. 120, Beta Theta Pi
A. B., Stanford, 1913.		
[2]Johnson, Kathrina	Boise, Idaho	Engl., 14 Roble
Johnson, J. Sidney	Marshalltown, Ia.	Econ. gr., Cardinal Club
A. B., Stanford, 1913.		
Johnson, Julia	Aberdeen, Wash.	Math. 102, 53 Roble
Johnson, Rowland Bryant	Redlands	M. E. 75, 70 Encina
Johnston, Duncan McArthur	San Fran.	Geol. 11, 5 Lasuen
Johnston, Earl T.	Cottonwood Falls, Ks.	PreL. 8, 18 Alvarado
Johnston, Faber Laine	San Jose	Law 85, Sigma Alpha Epsil
Johnston, Petra Beatrice	Redwood City	Germ. 91, Redwood City-r
Johnston, Walter Foster	Everett, Wn.	Econ. 97, 245 Ramona
Jones, Arthur Hast	Hayward	M.E. 11, Delta Kappa Epsilon
Jones, Dorette	Seattle, Wn.	Germ. 74, Gamma Phi Beta
Jones, Elton L.	Cupertino	M. E. 5, Cupertino-c
Jones, James Walter	LaPorte	Educ. gr., Acacia
A. B., Stanford, 1913.		

Jones, Leslie Cullen B. Elko, Nev. Law sp. unc. 4, Kappa Sigma
Jones, Perry Thomas San Bernardino PreL. 28, Sigma Chi
[1]Jones, Preston Matthew Palo Alto C. E. 44, 471 Channing-p
Jones, Robert Alton Burlington, Vt. Med. gr., 1939 Clay, SF-sf
A. B., Stanford, 1908.
[2]Jones, Vivian Cecil Fresno Hist., 83 Roble
Jordan, Charles William Ouray, Colo. PreL. 8, Phi Delta Theta
Jordan, Guy Wilfred Colton Chem. 92, 140 Encina
Jordan, John Cuthbert Exeter Chem. 8, 405 Emerson-p
de Journel, Robert Burlingame PreL. 57, Phi Gamma Delta
Judah, Marion S. Los Angeles Germ. 113, Alpha Phi
[1]Kaufman, Jewel W. Palo Alto PreL. 12, 258 High-p
[2]Kauke, John Harold Exeter M. E. †, 405 Emerson-p
Kay, Edwin William San Jose Chem. 54, 65 Encina
Kay, Willard E., Jr. Ogden, Utah Phyl. gr., 29 Encina
A. B., Stanford, 1912.
Kays, Cecilia Catherine Los Angeles Engl. gr., Delta Gamma
A. B., Trinity College, 1912.
[1]Kearns, Harold John Oakland Law 73, Delta Kappa Epsil
Keast, Fred Elton Watsonville PreL. 8, Delta Chi
Keefer, Chauncey Tennent Los Angeles M. E. sp. 108, 109 Encina
Keesling, Louis A. San Jose Ent. 70, Sigma Nu
Keiper, Margaret Lloyd Lafayette, Ind. Engl. gr., Kappa Alpha Theta
A. B., De Pauw, 1912.
Kelker, George David Glenwood Sp., Col. Ent. 41, 3 Encina
Keller, Arnold Portland, Ore. E. E. 59, College Terrace
Kellogg, Benjamin B., Jr. San Francisco Econ. 8, Kappa Alpha
Kellogg, Crawford McMann Ontario Chem. 11, 200 Encina
Kellogg, Lila Pierce Los Angeles Hist. 6, 12 Roble
Kemp, Madge Rose Sausalito Hist. gr., Alpha Omicron Pi
A. B., Stanford, 1913.
Kempkey, Edwin Karl Piedmont Ent. sp. 27, Acacia
Kennedy, Arthur G. Weeping Water, Neb. Engl. gr., 1130 Bryant-p
A. B., Doane College, 1902; A. M., Nebraska, 1905.
Kennedy, Margaret Lucretia Modesto Educ. 40, 573 Univer., SJ-sj
[1]Kennedy, Stanley C. Honolulu, T. H. Econ. 120, Phi Kappa Psi
Kern, Eugene Francis Berkeley Econ. 89, Beta Theta Pi
Ketelsen, Carl C. Tonopah, Nev. Geol. 68, 90 Encina
Kilcline, William Francis San Mateo PreL. 33, 108 Encina
Kile, Joseph Horton Stockton Econ. 76, 192 Encina
Kilpatrick, Jennie Faye Edenvale Lat. 104, 24 Roble
[1]Kimball, Dexter Simpson Ithaca, N. Y. M. E. gr., Ithaca, N. Y.
A. B., Stanford, 1896; Engineer, 1913.

Kimball, Elena Sophia	Eureka	Frn. 54,	35 Roble
Kimura, Minnie Ruth	Palo Alto	Educ. 70,	917 Alma-p
King, Lyman Stevenson	Oakland	M.E. gr.,	Sigma Alpha Epsil
A. B., Stanford, 1912.			
King, Marion Reginald	Porterville	Phyl. 77,	359 Emerson-p
[2]King, Rachel	Portland, Ore.	Math. †,	Alvarado Hall
King, Thomas Richard	Los Angeles	C. E. 8,	Alpha Tau Omega
King, Vernon Leslie	Petaluma	Geol. 10,	49 Encina
Kingsbury, Jere Morrell	San Francisco	C. E. 39,	10 Salvatierra
Kiser, Fay Wallace	Grants Pass, Ore.	Econ. 13,	756 Bryant
Kistler, Ray Henry	Covina	Phyl. 50,	190 Encina
Kistler, Roy Emanuel	Covina	E. E. 51,	190 Encina
Kitagawa, Kay Jiro	Kioto, Japan	Phyl. 75,	1047 Ramona-p
Knight, Courtland Whitney	Pasadena	Econ. 65,	Phi Gamma Delta
Knight, Ione Addie	Provo, Utah.	Lat. 16,	Roble
Knollin, Ernesto Ray	Auburn, N. Y.	Educ. 80,	78 Encina
Knox, Nellie D.	Palo Alto	Hist. 37,	751 Channing-p
Kobayashi, Nobuyoshi	San Francisco	E. E. 31,	1153 Cowper
[2]Kochi, Tomijiro	Tokyo, Japan	Econ. gr.,	10 Lasuen
A. B., Waseda, 1899; Ph. B., Franklin, 1910; A. M., Indiana, 1911.			
[2]Koeb, Otto	Basel, Switzerland	Germ. gr.,	5 Lasuen
B. S., California, 1912.			
Kohner, Oscar	Santa Clara	C. E. 7,	790 Madison, SC-sc
Krehbiel, Paul Gerhard	Reedley	Hist. 6.	4 Salvatierra
Kreps, Helen Katherine	Palo Alto	Germ. 45,	1129 Emerson-p
Kreps, Nora Elizabeth	Palo Alto	Econ. 32,	1129 Emerson-p
Krohn, Robert, Jr.	Portland, Ore.	Econ. 10,	Kappa Sigma
[1]Kuder, Clyde S.	Boise, Idaho	Geol. 28,	Cardinal Club
Kuhl, Carl Fleming	Stockton	Econ. 29,	Sigma Nu
Kusama, Yoshio	San Jose	Phyl. 13,	403 Kingsley-p
Kusunoki, Miyozo	Palo Alto	Hist. 70,	1101 Emerson-p
Lachmund, Harry Gray	Palo Alto	Bot. 13,	Bryant&Tennyson-p
[1]LaFetra, Gladys Adelaide	Los Angeles	Econ. 42,	Alpha Phi
Laine, Harry N.	Berkeley	Econ.sp. 4,	Sigma Alpha Ep
Laird, William Aikin	Lindsay	C. E. 108,	College Terrace
Lake, Harrison Morton	San Francisco	Educ. gr.,	20 Encina
A. B., Stanford, 1913.			
Lamb, Norman Leslie	Palo Alto	Phil. 71,	855 Ramona-p
Lammiman, Elwood George	Elk Grove	Educ. 11,	Acacia
Landers, Marjorie Ella	Bakersfield	Germ. 80,	Mariposa Club
Landreth, Harold Brooks	Pasadena	Law gr.,	Phi Gamma Delta
A. B., Occidental College, 1912.			

Lang, Louis Arthur — San Jose — E. E. sp. 65, 91 Lenzen, SJ-sj
[2]Langlois, Edna — Ritzville, Wn. — Fr. †, Alvarado Hall
Lantz, Grover Berner — Colton — Geol. 117, 76 Encina
[1]Lantz, Marion Louise — Colton — Germ. 43, Pi Beta Phi
[2]LaPeire, George Warren — Palo Alto — Geol. 18, 436 Hamilton-p
Larkin, Gail Carhart — Los Angeles — Law gr., Delta Chi
A. B., Stanford, 1912.
[1]Lasky, Bernard Harold — San Francisco — Geol. 125, Encina
A. B., Stanford, 1913.
Latshaw, Max — Duluth, Minn. — Chem. 39, 845 Waverley-p
Laumeister, Emma Loveland — Palo Alto — Chem. 41, Alpha Phi
Lawrence, George Louis — Modesto — Span. 122, Cardinal Club
Leach, Charles Nelson — San Francisco — Med. gr., Lane Hosp., SF-sf
A. B., Stanford, 1909.
[1]LeClere, Walter Booth — Los Angeles — Econ. †8, 219 Ramona-p
Lee, Naylor C. — Denver, Colo. — M. E. sp. 7, Sigma Nu
[2]Lee, Russel Van A. — Spanish Fork, Utah — Chem., 11 Salvatierra
Lee, Wah Seyle — Canton, China — Geol. 53, 318 Emerson
Leithold, Alice — Woodland — Econ. †8, Delta Gamma
Leland, Percy Earl — Dixon, Ill. — PreL. 3, 11 Salvatierra
Lener, Kasper — San Jose — Law sp. unc. 101, SanJose-sj
Leonard, Alexander Thomas, Jr. — S.Fran. — Med. gr., 611 Bryant-p
B. S., California, 1911.
Lever, Lewis Ferdinand — Redlands — PreL. 26, Phi Gamma Delta
Levy, Gaston Jack — San Mateo — Chem. 14, 619 Laurel, S.M.-sm
Levy, Harold Maurice — Reno, Nev. — Engl. 16, 30 Encina
Levy, Karl Riffle — Los Angeles — Law 100, 64 Encina
Levy, Paul Mark — San Francisco — Chem. gr., 30 Encina
A. B., Stanford, 1913.
Lewis, Edna Branham — Pacific Grove — Graph. 52, Mariposa Club
[2]Lewis, Frances Mays — Escondido — Graph., 46 Roble
Lewis, Lester Warren, Jr. — Edmonds, Wn. — Law 66, Kappa Sigma
Lewis, Walter Kinney — Riverside — Law 64, 183 Encina
Lewis, William David — Pittsburg, Pa. — C. E. 73, 411 Waverley-p
Libis, Ethel Melrose — Akron, Ohio — Frn. 101, 66 Roble
Ling, Homer John — Oakdale — M. E. 38, 21 Encina
[2]Lipton, Robert Elwood — San Jose — Econ., 604 S. 2nd, SJ-sj
[2]Little, George Barnard — Whittier — C. E. sp. 25, Phi Kappa Psi
Livengood, Frances M. — Meyersdale, Pa. — Engl. 86, Delta Delta Delta
Lockwood, Marie E. — Pasadena — Hist. 108, Pi Beta Phi
Loder, Altha Frances — Palo Alto — Phyl. 14, 426 Florence-p
[2]Loepp, David Ferdinand — Avon, S. D. — Law gr., Mariposa Hotel-p
A. B., Morningside College, 1911.

Logan, William Anthony — La Honda — Law 86, 36 Richmond, SJ-sj
Long, Crayton Winton — Hayward — PreL. 9, DeltaKappaEpilson
Long, Jean Ward — Los Angeles — Hist. 63, Delta Gamma
Long, Lydia — Hayward — Hist. 78, Gamma Phi Beta
Long, Mabel Jo — Boise, Idaho — Germ. 108, Delta Delta Delta
[1]Long, Royce Reed — Stanford Univ. — Phyl. gr., 11 Salvatierra
A. B., Stanford, 1908.
[2]Long, Ruth — Hayward — Hist., Gamma Phi Beta
Longmire, William Richard — Highland — Geol. †10, Sigma Nu
Looney, Jerry Thurman — Palo Alto — PreL. 37, 416 Webster-p
de Lorimer, Arthur John — Calgary, Can. — Law sp. unc. 35, 707Bryant-p
de Lorimer,George Stephen — Calgary,Can. — Law unc. 31, 707 Bryant-p
Lorraine, Ruth Sayre — Paris, France — PreL. 27, Gamma Phi Beta
Lothrop, Margaret M. — Concord, Mass. — Econ. gr., KappaAlphaTheta
A. B., Smith, 1905.
Lotz, Cyril Clyde — San Jose — Law 81, 116 S. 9th, SJ-sj
Loud, Henry Lawrence — Pomona — Econ. 99, 128 Encina
Lough,HerbertMelville — Grand-Junc.Col. — Econ. 78, 69 Encina
Lovejoy, Winifred — Seattle, Wash. — Germ. gr., Delta Gamma
A. B., Washington, 1912.
Lovering, Gladys L. — Findlay, Ohio — Hist. 94, 34 Roble
Low, Apau Paul — Honolulu, T. H. — C. E. 89, 318 Emerson
[2]Lowell, Maud — Alhambra — Fr. †, Alvarado Hall
[1]Lowman, Sheda Amy — Los Angeles — Hist. 120, Alpha Omicron Pi
A. B., Stanford, 1913.
Lucy, Harold — San Francisco — Chem. sp. 20, 545 Bryant-p
[1]Luis, Adriano Medina — Laoag, P. I. — M. E. 6, Menlo Park-mp
Luker,Benjamin Franklin — Proctor,Tex. — Frn. gr., 909 University-p
A. B., Washington & Lee, 1909; A. M,. 1910.
Lull, Linford C. — Los Angeles — E. E. 102, Sigma Nu
Lummis, Katharine — Baltimore, Md. — Lat. gr., Coll. Pacific, SJ-sj
A. B., Stanford, 1907.
[1]Lundgren, E. Leonard — Palo Alto — C. E. gr., 262 Kingsley-p
B.S.C.E., ArmourInstituteTechnology; C.E.,1907; M.S.,Iowa,1908
[1]Luther, Martin, Jr. — San Jose — Econ. 78, Sigma Alpha Epsil
[1]Lutz, Katherine Barbara — Santa Ana — Hist. 128, KappaAlphaTheta
A. B., Stanford, 1913.
Lyman, George Byron — Yuba City — Geol. 49, 166 Encina
Lynch, Windsor Chase — Boise, Idaho — Econ. 46, Cardinal Club
[2]Lyne, Henry Stephan — Melbourne, Aust. — Geol. 110, 405 Kipling
Lyon, Percy Tufts — Hollywood — M. E. 5, Zeta Psi
McAleer, Charles Torrance — Los Angeles — Geol. 8, Alpha Tau Omega

McArthur,MargaretAurelia LosAngeles Hist. 14, Delta Delta Delta
McCarthy, Francis Justin San Francisco Med. †35, 2306Vallejo,SF-sf
A. B., St. Mary's College, 1911.
McCarthy,Pearl Lydia Honolulu, H. T. Frn. 43, 52 Roble
McCartney,FloraGeorgia SiouxFalls,SD Hist. 106, 931 Scott-p
McCausland, Edward Galen Acampo Engl. 10, Sigma Nu
McChrystal,Arthur J. Salt Lake C., U. Chem. 43, Sigma Chi
[2]McClain, Gwendolyn Palo Alto Engl. †, 653 Melville-p
McClatchy, Leo Anthony Sacramento Engl. 10, Chi Psi
McCloskey, Paul Norton Salada Bch. PreL. 46, Delta Kappa Epsil
McClure, Frank Elwood Los Angeles Econ. 28, Beta Theta Pi
[1]McClure, Wm. A. Birmingham, Ala. Phyl., 335 Emerson-p
McClurg, Lena Marie Los Angeles Graph. 91, Pi Beta Phi
McClurg,VernerBlackmore LosAngeles C. E. 38, Phi Delta Theta
McConnell, Albert R. Durango, Colo. Econ. 113, Delta Tau Delta
McCord, Emily E. San Diego Econ. 42, 32 Roble
McCorkle, Paul Clarendon Escondido E. E. 95, 704 Bryant-p
[1]MacCormac, Josephine V. Palo Alto Grk. gr., 334 Lincoln-p
A. B., Stanford, 1912.
McCormack,CharlesF. Spokane,Wash. C. E. 47, 2 Encina
McCormack, May E. Tacoma, Wash. Engl. 87, Langworthy Club
McCoy, Margaret Lois Pasadena Engl. 40, Gamma Phi Beta
McCray, Hugh E. Mentor, O. Geol. sp. 6, 22 Lasuen
McCray, Lynn Morris Los Angeles PreL. 7, Kappa Sigma
McCready, Harry Lewis Palo Alto C.E.sp. 119, 633 Channing-p
[1]McCudden, Katherine Ramona Vallejo Hist. 31, Kappa Kappa Gam
McDaniel, Robert Levi Ogden, Utah Econ. 85, 68 Encina
[1]McDermott, Laura Irene Los Altos Chem. gr., Los Altos
A. B., Stanford, 1912.
Macdonald, Alexander S. San Francisco C. E. 81, 152 Encina
[1]McDonald, Clarence Chester Woodland Law gr., Delta Chi
A. B., Stanford, 1912.
McDonald, Ella Nancrede Pasadena Lat 89, 26 Madrono
McDonald, John Lewis San Jose M. E. 68, 151 Encina
MacDougal, Alice Carmel Engl. 14, 33 Roble
McGonigle, Rose Vibiana Los Angeles Hist. 81, 53 Roble
[1]McGovern, Anna Louise Palo Alto Hist. gr., 651 Channing-p
A. B., Stanford, 1912.
McGowan,CharlesWilfred Watsonville M. E. sp. 6, Acacia
Machado,JohnHomer SanLuisObispo PreL. 9, Santa Clara-sc
McHale, Myra Briggette Palo Alto Hist. 12, 635 Webster-p
McInerny, Arthur Jerome LosAngeles Engl. sp. 13, DeltaTauDelta

McInerny, James Edmund Los Angeles Engl. 107, Delta Tau Delta
Macintyre, Arthur Donald Los Angeles C. E. 15, 197 Encina
Mack, Russell Vernon Aberdeen, Wash. PreL. 8, 712 Bryant-p
Mackall, Murray R. Tacoma, Wash. Lawsp.unc.4, Sigma Alpha Ep
McKee, Paul Boole San Francisco E. E. 81, Theta Delta Chi
McKendry, Ramona Palo Alto Hist. 87, 1035 Bryant-p
Mackey, Florence Goodwin Monrovia Graph. 36, Gamma Phi Beta
McKinney, Verne Willson Palo Alto C. E. 65, 620 Waverley-p
McKnight, Harold Metcalf Los Angeles Econ. 75, Delta Kappa Epsil
McLaughlin, Charles Porter Sacramento PreL. 18, Phi Delta Theta
McLaughlin, Frances Palo Alto Graph. 28, 1020 Bryant-p
McMahon, Harry Eugene Pacific Grove Chem. 9, 22 Lasuen
McMillan, Hazel May Fallbrook Hist. 109, 57 Roble
McNair, Maurice Lloyd Los Angeles PreL. 44, Phi Kappa Psi
McNeely, Roland Los Angeles Law 96, Kappa Sigma
Macomber, Forrest Devore Ida Grove, Ia. PreL. 7, Cardinal Club
McPheeters, George Carl H. Palo Alto Med. gr., 1908 Baker, SF-sf
A. B., Stanford, 1910.
McPherron, Arnie Lilian Hollywood Engl. 87, 20 Madrono
McPherson, Kenneth Rees San Jose C. E. 37, 54 Settle, SJ-sj
[1]Macready, John Arthur Los Angeles Econ. 124, 8 Encina
Macrum, Natalie Los Altos Lat. 77, Los Altos-l
McSherry, Ralph Caylor Dayton, O. Engl. 46, 2 Encina
McWilliams, Charles Kirkton San Jose Chem. gr., 961 S. 1st, SJ-sj
A. B., Stanford, 1912.
Macy, Lloyd Campbell Chem. 10, Campbell-c
Mader, Constance Marie Santa Rosa Germ. 76, 207 Hawthorne-p
Madison, Christine Hayward Math. 83, Madrono
Mail, Mary Margaret Los Angeles Engl. 42, Madrono
[2]Maines, Harriette Eliz. Los Angeles Lat. 48, Alpha Omicron Pi
Maloney, Agnes Clare San Francisco Hist. 64, Pi Beta Phi
Maltaner, Frank Cincinnati, O. Bact. gr., 251 Emerson-p
A. B., Stanford, 1912.
Maltby, Joseph McKinley Long Beach PreL. 12, 19 Salvatierra
Manning, Edward Earle Los Angeles Hist. 108, Beta Theta Pi
[1]Mantz, Robert William Redwood City Educ. †, Redwood City-r
Maple, Ray Cowser Peoria, Ill. Hist. †10, Sigma Chi
Marble, Russell Price Nashville, Mich. Law 98, 339 Emerson-p
Marich, William Daniel Redding E. E. 86, 106 Encina
Markley, Chandler Hamilton San Jose C. E. 54, 146 Encina
Marshall, James G. White Plains, N. C. Law unc. 89, Acacia

Marshall, Kenneth Irving Los Angeles M. E. 110, 88 Encina
[1]Marten, William Samuel San Jose Educ. gr., 250 S. 13th,SJ-sj
B. S., Columbia, 1905; A. M., Stanford, 1913.
Martin, Thomas P. Ballinger, Tex. Hist. 97, 142 Encina
Mason, Grace Amelia San Jose Engl. 44, 535 S. 10th, SJ-sj
[1]Mason, Lewis Tracy Santa Cruz PreL. 26, 357 Fulton-p
Mathews, James Henry Eureka Law 71, Encina
Mathews, Margaret Mary Eureka Rom. L. 20, Alvarado Hall
[1]Matsuzawa, Atsushi Akita, Japan Engl. sp. 9 Salvatierra
Maurer, Loche Morton Dillon, Mont. Econ. 73, Kappa Alpha
Mayeda, Isamu Chibaken, Japan E. E. 11, Japanese Club
Meacham, Ray Alexander Long Beach PreL. 10, Cardinal Club
[2]Mead, James Enoch Pasadena PreL., 46 Encina
Mehrtens, Henry George San Francisco Med. gr., 2405 Pacific, SF-sf
B. S., California, 1911.
Meinhard, Arthur R. New York, N. Y. Chem. sp. 7, 251 Emerson-p
[2]Mendenhall, Gertrude M. Denver, Colo. Graph. †, 660 Waverley-p
Merrill, John R., Jr. Patterson, N. J. Geol. 2, Sigma Nu
Meyer, Alfred Falck San Francisco PreL. 52, 168 Encina
Meyer, Charles Hillegas Menlo Park C. E. 8, Menlo Park-mp
Meyer, Lydia Lucile Milwaukee, Wis. Germ. gr., 1116 Ramona-p
A. B., Wisconsin, 1909.
Meyerholtz,Ivan Rheinier Cupertino C. E. 83, Cupertino-c
[2]Michelson, Olof Rueben Monroe, Utah Law sp. unc., 318 Lytton-p
[1]Michod, Rose Olive Los Angeles Graph. †8, Alvarado Hall
Mickle, John Lloyd Centerville Law 65, Sigma Nu
Miebach,PhilipJohn Lethbridge,Alb.,Cn Econ. 53, 183 Encina
Millard, Marland Boyd Markesan, Wis Econ. 72, 21 Salvatierra
Miller, Clifton McPherson Santa Cruz Law 40, Delta Tau Delta
[2]Miller, Elmer Provo, Utah Law †, 633 Bryant-p
A. B., Brigham Young University, 1910.
[2]Miller, Eva Irene Akron, Ohio Germ. †, 52 Roble
Miller, Horace Baker Rivera Hist. 11, 42 Encina
[1]Miller, James Andrew San Francisco PreL. 85, Acacia
Miller, James Arthur Palo Alto E. E. 108, Encina
[1]Miller, John Owen San Francisco C. E. gr., Coyote-c
A. B., Stanford, 1912.
Miller, John Paul Chico Law unc. 55, 18 Encina
Miller, Stella A. Huntington Park Engl. gr., 60 Roble
A. B., Stanford, 1910.
Millett, George Wilbur Sunnyvale Phyl. 70, Sunnyvale-s
Milliken, Carl Shields Denver, Colo. PreL. 12, Phi Gamma Delta

[1]Mills, Thornton A., Jr. Walnut Creek Hist. †, 342 High-p
Mills, Zetta Mable Palo Alto Hist. 11, 534 Forest-p
Millspaugh, Helen Hollywood Graph.15, KappaAlphaTheta
Missner, Frank R. S. San Francisco Phyl. Med. 97, CardinalClub
Mitchel, Glen Henry Los Angeles Law 62, Kappa Sigma
[1]Mitchell, Edwin Harvey Long Beach E. E. sp. 28, 16 Salvatierra
[2]Mitchell, Ellwood Ormsbee San Jose PreL. sp., 475 S.Priest,SJ-sj
Mitchell, Merle Ellsworth Santa Rosa Law gr., 35 Encina
A. B., Stanford, 1912.
Mittenthal, Norman Jerome Fresno M. E. 12, 146 Hawthorne-p
[2]Miwa, Suyehiko Kumanto, Japan Econ. gr., Japanese Club
A. B., Waseda, 1910.
Miwa, Tsucukichi San Francisco E. E. sp. 49, Japanese Club
Moffitt, George Wilber Fonda, Ia. Phys. gr., 603 Waverley-p
A. B., Iowa, 1910.
Monsch, David Frantz Louisville, Ky. Lat. 62, 707 Bryant-p
[1]Montague, Marjorie Chicago, Ill. Engl. 120, Delta Gamma
A. B., Stanford, 1913.
[2]Montague, Helene Los Angeles Hist. 107, Alpha Omicron Pi
[2]Moore, Alice Los Gatos Engl., Alpha Omicron Pi
Moore,AndrewJamison Mather,Man.Can Hist. 96, 635 Bryant-p
[2]Moore, Charles Dunn Ouray, Colo. PreL., 4 Salvatierra
Moore, Neil Preston Palo Alto Chem. 67, 564 Hamilton-p
[2]Moore, Virginia Los Gatos Hist. gr., Alpha Omicron Pi
A. B., Stanford, 1912.
Moore, William Homer Selma Phyl. 47, 94 Encina
More, Edwin Reynolds Tacoma, Wash. C. E. 34, 182 Encina
Moreno, Virginia Memphis, Tenn. Frn. 91, 22 Alvarado
Morgan, Harry Joseph Los Angeles Geol. 72, 154 Encina
Morgan,Joseph Richardson LosAngeles Engl. 11, Kappa Alpha
Morgan,MadelineBurleigh SantaBarbara Engl. 42, 59 Roble
Morgan, Ralph S. Los Angeles Econ. 106, 173 Encina
Morin, Harriette Lucile San Francisco Bot. 78, 66 Roble
Morosco, Albert Harold San Diego PreL. 8, 19 Lasuen
Morrison, MauriceEverard Morgan Hill C. E. 109, 46 Encina
[1]Morrow, Osborn Belt Portland, Ore. M. E. sp. 44, SigmaAlphaEp
Morse, Evelyn Lodi Hist. 72, Madrono
[2]Morse, Genevieve Lodi Germ. †, Alvarado Hall
Morton, Frank Willard San Francisco Engl. 51, 22 Lasuen
Mosher, Hugh Harold San Jose Chem.106, 201S.Critt'nd'n,SJ
Moul, Charles Thomas Oakland Med. †13, UniversityHotel-p
A. B., St. Mary's College, 1911.

Mulock, Fred S.	San Gabriel	E. E. 50, 45 Encina
Munger, Arthur Lee	San Francisco	Med. gr., 2040 Scott, SF-sf
A. B., Stanford, 1910.		
[1]Munger, Frieda H.	San Francisco	Engl. gr., 127 Cowper-p
A. B., Stanford, 1910.		
Murphy, Frank Edward	Hollister	Phyl. 7, Sigma Chi
Murray, Alfred Conklin	Woodland	Law unc. 53, 116 Encina
Murray, Frederic Seymour	Palo Alto	Graph. 12, 1019 Bryant-p
Murray, George Harvey	Hanford	PreL. 53, Sigma Nu
Murray, Hamilton	Rio Bravo	Educ. gr., Cardinal Club
A. B., Stanford, 1912.		
Murray, Robert Lindley	Palo Alto	Chem. 107, 1019 Bryant-p
Murray, Virginia	Kern	Phyl. 58, Kappa Alpha Theta
Myers, Ralph Cather	Bakersfield	C. E. 69, 57 Encina
Nagel, Else Helen	Palo Alto	Econ. 36, 356 Addison-p
Nagel, Minna Ivy	Palo Alto	Hist. 78, 356 Addison-p
Nakamura, Yuichi	Yamaguchi, Japan	E. E. 76, 29 Salvatierra
Nakayama, Shonosuke	Tokio, Japan	Ent. 78, 1a Alvarado
Nam, Ong Yet	San Francisco	Chem. 43, 318 Emerson
Narver, David Lee	Los Angeles	C. E. 93, Sigma Alpha Epsil
[1]Neal, Helen	Belmont	Hist. 120, Belmont-b
A. B., Stanford, 1913.		
Neal, Roland	San Jose	Chem. gr., 8 VillaAve.,SJ-sj
A. B., Cornell College, 1904; A. M., 1907.		
Needham, Guy Evan	Tracy	Engl. 109, 66 Encina
Needham, Roy Elwood	Tracy	PreL. 12, Encina
Neel, Beula Jane	Ventura	Bot. 72, Kappa Alpha Theta
Neill, Ernest L.	San Mateo	E. E. 41, 89 Encina
[1]Nelson, Ernest Bruce	San Jose	Graph. 120, Kappa Alpha
A. B., Stanford, 1913.		
[1]Nesbitt, Chetanna Maude	Vallejo	Hist. 120, Alpha Omicron Pi
A. B., Stanford, 1913.		
[1]Newcomer, Mabel	Palo Alto	Econ. 120, 1015 Forest-p
A. B., Stanford, 1913.		
[1]Newland, Jessie Elsie	Huntington Beach	Graph. †8, Roble
Newman, Margaret E.	Oil Center	Engl. 67, Mariposa Club
Newman, Ollis Willard	Santa Barbara	Bot. 101, 24 Encina
Newman,ReaCambridge	Santa Barbara	E. E. 109, 49 Encina
[1]Newman, Willard Hodges	San Diego	Hist. 121, Delta Chi
A. B., Stanford, 1913.		
Newnan, Eva May	Mountain View	Lat. 46, Mountain View-mv
Nichols, C. Fenton	San Francisco	Law 100, 158 Encina

Niebel, Herbert Lee	Cleveland, O.	C. E. 71,	Phi Kappa Psi
[1]Niepp, Frederick Antone	Ukiah	E. E. 48,	550 Kingsley-p
Nisbet, John McHenry	Upland	Geol. 14,	Theta Delta Chi
Nixon, Carey H.	Onawa, Ia.	Geol. 47,	Delta Tau Delta
[1]Noble, Ralph Matthews	Galesburg, Ill.	Math. 118,	Phi Delta Theta
Nolan, Frank L.	Palo Alto	M. E. 15,	420 Hamilton-p
Nomura, Hanji	Kobe, Japan	Engl. 93,	1445 Bryant
Noonan, WilliamF.	GlenwoodSps.,Colo.	PreL. 11,	37 Encina
North, Frances	Cupertino	Engl. 65,	Cupertino-c
Norton, Bertha F.	Rock Creek, Idaho	Hist. 45,	Mariposa
Norton, John Kelley	Palo Alto	Educ. 17,	642 Webster-p
Norton, Willis Sherwood	Stockton	C.E. 12,	SigmaAlphaEpsilon
Nowell, Patterson Dana	Tulare	Law 107,	120 Encina
Null, George Wallace	San Jose	C. E. 80,	547 S. 9th, SJ-sj
Nusbaum, Emanuel Rhodes	Colton	Grk. 82,	542 Cowper-p
Nussbaum, Fred. H.	Bonn, Germany	Med. †,	1617 Vallejo, SF-sf
Ober, Florence Sophia	Los Altos	Hist. 108,	Los Altos
Oberle, EugeneJean	Neufchatel,Switz'ld	Frn. sp. 15,	College Terrace
[1]O'Brien, Ruth Hayes	Sunnyvale	Engl. 39,	Delta Delta Delta
Obrikat, Edward Robert	Alhambra	C. E. 50,	143 Encina
O'Connell, FrancisAnthony	Mt. View	PreL. 47,	Mt. View-mv
[1]O'Conner, George Reynolds	Alameda	Econ.,	Beta Theta Pi
Odenheimer, Frances June	Los Angeles	Germ. 75,	130 Fulton-p
Ogden, LaurenceArmstead	Bakersfield	E. E. 38,	Phi Delta Theta
Olcese, Elsie Agnes	Merced	Educ. 42,	KappaKappaGam
Oldshue, Grace Ferrol	Waveland, Ind.	Engl. 106,	17 Madrono
[2]O'Leary, Stanley F.	Holyoke, Mass.	Geol. sp.,	660 Waverley
Oliver, Jean Redman	Chico	Med. gr.,	2327 Sacto, SF-sf
A. B., Stanford, 1911.			
Oliver, Myron Angelo	Monterey	Graph. 39,	159 Encina
[1]Olmsted, Clarence Edward	Los Angeles	Geol. 9,	Kappa Sigma
Olmsted, Frank Osbun	Los Angeles	E. E. 46,	Delta Upsilon
[1]Olmsted, Roger W.	Los Angeles	C. E. 123,	Delta Upsilon
A. B., Stanford, 1913.			
Olsen, Harry	Palo Alto	C. E. 42,	321 Fulton-p
Olsen, John	Palo Alto	Graph. 39,	321 Fulton-p
Olsen, Louis	Palo Alto	C. E. 79,	321 Fulton-p
O'Neill, Paul Meyer	Pasadena	PreL. 7,	Beta Theta Pi
Oppenheimer, Leon I.	Spokane, Wash.	Phyl. 98,	Encina
Oppenheimer, Ruth	Spokane, Wash.	Chem. 12,	39 Roble
[1]Organ, William Robert	Palo Alto	E. E. 32,	454 Forest-p

Orme, Charles Henry Phoenix, Ariz. PreL. 13, Delta Upsilon
[1]Orr, Florence Jennings San Francisco Hist. 120, Kappa Kappa Gam
A. B., Stanford, 1913.
Oshima, Sho Suruga, Japan Phil. 105, 718 Emerson-p
Osmun, Joseph Allen, Jr. Rivera Ent. 15, Sigma Nu
Ostenberg, Zeno San Jose Chem. gr., 140 Encina
A. B., Stanford, 1913.
Ostrander, Justus Marvin Palo Alto Econ. 39, 900 Waverley-p
Otis, Richard Gaines Durango, Colo. C. E. 93, 559 Cowper-p
[1]Ott, Ralph Titus Redlands Bot. †6, Los Altos-l
Ouderkirk, William R. Honolulu, T. H. Law 45, Phi Kappa Psi
Overacker, Louise St. Helena Econ. 42, 58 Roble
Overman, Helen Doris Santa Barbara Bot. 23, 73 Roble
Owen, Ethel Los Gatos Phyl. 79, 45 Roble
Owens, William Brownlee San Jose Law 65, Delta Chi
Oyen, Ariadne Minerva Everett,Wash. Germ. 18, Delta Delta Delta
Oyen, Scipio Aristotle Everett, Wash. PreL. 35, 161 Encina
Oyster, Alfred Joseph Stanford Univ. Econ. 10, Delta Upsilon
Palm, Arthur William Sacramento PreL. sp. 10, 18 Alvarado
Papazian,Nerses P. Constantinople,Tky. M. E. sp. 12, 841 Bryant-p
Park, Carl Joseph Palo Alto Educ. 95, 51 Encina
Parker, Bert Lynn Mantua, O. Educ. 6, 1350 Bryant-p
Parker, Elsie May Santa Ana Hist.gr., KappaAlphaTheta
A. B., Stanford, 1913.
Parker, Frances Dorothy Ely, Nev. Grk. gr., 258 High-p
A. B., Nevada, 1910; A. M., 1912.
Parkinson,Benoni Scofield Palo Alto Zool. 6, 1101 University-p
Parkinson, Mary Los Angeles Hist. 42, Delta Gamma
Parkinson,RobertRoseberry Palo Alto Econ. 37, 1101 University-p
[1]Parmelee,HarveyWright Santa Barbara Geol. 137, 110 Encina
A. B., Stanford, 1913.
[1]Partridge, John Frederick San Rafael C. E. gr., Coyote-c
A. B., Stanford, 1912.
Partridge,JosephArlington Nampa,Ida. PreL. 38, 111 Encina
Patterson, Lee Portland, Ore. Geol. 83, Chi Psi
Paul, Arthur Samuel Ely, Nev. Econ. 33, 358 Homer-p
Paul, Chester Francis Ely, Nev. Engl. 102, 358 Homer-p
Paul, William Glae Wickenburg, Ariz. PreL. 22, Delta Tau Delta
Paulsen, Jasper William Palo Alto Geol. 9, 602 Waverley-p
Paulson, John Edwin Arco, Minn. Phyl.-Med. 102, 704Bryant-p
Payne, Alan Edward Morgan Hill Educ. 22, 77 Encina
[1]Pearson, William Rodney Los Angeles PreL. 22, Alpha Tau Omega

Peck, Edward Lawrence Pasadena M. E. sp. 106, 134 Encina
Peck, Sedley Clarendale Compton Econ. 117, Sigma Chi
Peckham, Ignatius Martin San Jose Law gr., 74, N. 12th, SJ-sj
A. B., Stanford, 1911.
Peers, George Alexander Mayfield E. E. 34, Mayfield-m
Pellas, SilviusFrederick NewYork,N.Y. Geol. 67, Phi Kappa Psi
Perham, Philip D. B. Palo Alto Grk. 47, 335 Melville-p
Perkins, Charles Timothy Alameda Bot. 63, 23 Encina
Peters, Herman Los Altos Econ. gr., Los Altos-l
A. B., Stanford, 1907.
Peters, Jerome Devereaux San Jose Law gr., Delta Upsilon
A. B., Stanford, 1912.
Peters, Raymond Ashley StanfordUniv. Educ. sp. 9, 4 Salvatierra
[1]Petersen,WalterEdward SantaBarbara E. E. 97, 154 Encina
Peterson,HelenMyranda Honolulu,T.H. Germ. 13, 36 Roble
Pettit, Albert Victor Hoquiam,Wash. Phyl. 36, 43 Encina
Phares, John French Santa Rosa Bot. 37, Kappa Alpha
Phelps, Clarence Lucien Palo Alto Educ. gr., 515 Waverley-p
A. B., Stanford, 1909.
Philippi, John Fred Los Angeles Geol. 32, Delta Kappa Epsil
Phillips, Alfred Liles Santa Cruz Chem.Med.103, DeltaTauD.
Phillips, Jonathan Edward Modesto PreL. 9, Delta Chi
Phillips, Raymond Millard LosAngeles Law 70, Acacia
Phillips, Wendell Keigh Portland,Ore. PreL. 19, Kappa Alpha
Pier, Arthur Bruno Los Angeles M. E. 14, 22 Encina
Pier, Paul Albert Palo Alto Law 72, Delta Chi
[1]Pierpont, Austen Nordhoff Econ. 71, 11Alvarado
Pilipenko, Vasili Ivansvitch Riverside Math. sp. 6, 704 Bryant-p
Pingree, Louis William Ogden, Utah Chem. gr., 156 Encina
A. B., Stanford, 1912.
Pingree, S. Earl Ogden, Utah Econ. †12, 724 Bryant-p
Pinkerton, Rachel Pearl Pacific Grove Hist. 37, Gamma Phi Beta
[1]Piper, Will Bruce Prescott, Ariz. C. E. 64, 179 Encina
Plummer, Edna San Jose Math. 80, 546 S. 2nd, SJ-sj
Poindexter, Emily Virginia Los Gatos Lat. 45, Alpha Omicron Pi
Polson, George W. Menlo Park E. E. 108, 156 Encina
[1]Porter,DurhamWhite Washington, D.C. C. E. 60, 318 Lytton-p
Porterfield, Wilson C. Silver City, N.M. PreL. 67, Encina
Post, Morgie Adelia Monrovia Hist. 106, Alpha Phi
Powers, Mildred Sutherland Oroville Math. 73, Kappa Kappa Gam
[1]Pratt, Eric Torrens Ontario Bot. †4, 178 Encina
Pratt, Eugene Elliot Ogden, Utah PreL. 46, 724 Bryant-p

Pratt, Francis Sitwell	Ontario	Chem. 115,	178 Encina
Preisker, William Henry	Palo Alto	Chem. 96,	Sigma Nu
Price, Francis	Santa Barbara	Law 86,	181 Encina
Price, John Bertsch	Hazelton, Pa.	Hist. 39,	Phi Kappa Psi
Price, Longueville Howe	Palo Alto	Econ. 107,	602 Webster-p
Price, Merton James	San Francisco	Phyl.-Med.	105, PhiDeltaTh.
Price, Ruth	San Diego	Hist. 88,	6 Roble
Prien, Otto Louis B. S., Wyomng, 1908.	Laramie, Wyo.	Med. gr.,	251 Emerson-p
[1]Pringle, Kenneth G.	Pittsfield, Ill.	PreL.,	Encina
Prout, Florence	Palo Alto	Frn. 43,	Langworthy Club
Pruett, Harry Jeroam A. B., Stanford, 1912.	Pomona	Phyl. gr.,	Kappa Alpha
Pruett, John Floyd A. B., Stanford, 1909.	San Francisco	Med. gr.,	2218 Webster-p
Pugh, Edmund Wright A. B., Stanford, 1911.	Los Angeles	Law gr.,	Delta Chi
[1]Putcamp, Fanny Elizabeth A. B., Stanford, 1913.	Oakley	Germ. 120,	25 Roble
Pyle, Kenneth	Gilroy	Geol. 93,	1327 Byron-p
Radke, George Otto	Santa Maria	C.E.sp.11,	Tennyson&Cowp
[1]Ramsay, Harold Hugh	Palo Alto	Engl. 27,	251 Webster-p
Ramsey, Alice Emily	Stanford Univ.	Hist. 58,	20 Lasuen
[1]Rankin, Fanny Belle A. B., Stanford, 1913.	Petaluma	Hist. 121,	Madrono
Rathbun, Harry John	San Jose	M. E. 15,	439 S. 12th, SJ-sj
Ray, Bhupendranath B. Sc., Calcutta, 1908.	Calcutta, India	Geol. gr.,	407 Waverley
Ray, James Chandler	Palo Alto	Geol. 81,	1235 Webster-p
Rea, James Harrold	Gilroy	C. E. 86,	Chi Psi
Reed, John Watford	Seattle, Wash.	Phil. 104,	635 Bryant-p
Reeder, Leland Parker	Los Angeles	Econ.49,	SigmaAlphaEpsilon
Reeve, Ingalls I.	San Jose	Econ. 108,	Delta Chi
Reeve, Stanley Matthew	Denver, Colo.	Engl. sp. 108,	161 Bryant-p
Reeves, Frank Wixon	San Bernardino	Geol. 57,	Sigma Nu
Rehm, Francis Edward	Sonora	Econ 45,	153 Encina
Rehmke, Anna Marie	Santa Barbara	Germ. 10,	667 Melville-p
Rehmke, Henrietta	Santa Barbara	Germ. 10,	667 Melville-p
Reid, Herman Lincoln	Berkeley	Econ. 73,	Chi Psi
Reineman, LeRoyFoerster	Pasadena	Econ. 36,	Sigma Nu
Remington, Arthur E.	Watertown, N.Y.	Geol. sp. 132,	930 Scott-p
Reynolds,FlorenceElizabeth	UpperLake	Hist. 108,	455 University-p

Reynolds, Lloyd Robinson	Upper Lake	Phyl. 46,	455 University-p
[1]Richards, Percie Douglas	Pasadena	C. E. †2,	Alpha Tau Omega
Richards, Ralph Edward	Hilo, T. H.	E. E. 70,	Acacia
Richdale, Jay Williard	Santa Barbara	C. E. 68,	155 Encina
Richey, Frank Herbert	Tipton, Ind.	Law 96,	11 Salvatierra
Richter, Margaret Rose	Los Angeles	Bot. 11,	Alvarado Hall
Rider, Louise	Watsonville	Graph.105,	LangworthyClub
Riggins, Laurelle Marie	Palo Alto	Engl. †13,	651 Waverley-p
Righter, George Lutes	Campbell	Hist. gr.,	Acacia
A. B., Stanford, 1912.			
Riley, Robert Scales	Berkeley	M. E. sp. 6,	County Road
Ring, Sidney Harrison	Portland, Ore.	Engl. 5,	Pine Cottage
[1]Risling, Bertram August	Palo Alto	Econ. 22,	935 Webster-p
[1]Ritter, Allan G.	S. Williamsport, Pa.	Law gr.,	Kappa Sigma
Ph. B., Bucknell, 1909; A. M., 1911.			
Robb, Charles Fremont	Prescott, Ariz.	Hist.sp.31,	DeltaKappaEpsil
Roberts, Eva Alice	Los Angeles	Econ. 100,	Madrono
Roberts, Frank Kittredge	Santa Cruz	Econ. sp. 9,	Delta Tau Delta
Roberts, Richard Evan	Redlands	Law 64,	Phi Delta Theta
Robertson, Alfred W.	Santa Barbara	Law gr.,	Phi Gamma Delta
A. B., Stanford, 1912.			
[1]Robesky, Ethel Minerva	Bakersfield	Phys. 86,	Mariposa Club
[2]Robinson, Charles A.	San Francisco	Engl. 28,	4 Salvatierra
Robinson, Helen West	Burlingame	Engl. 102,	14 Madrono
Robinson, Irene	Trabuco	Engl. 108,	31 Roble
Robinson, Landon M.	Louisville, Ky.	Engl. 105,	Sigma Chi
Rockman, William Henry	Los Gatos	M. E. 48,	Los Gatos-1
Rodden, Mary Louise	Oakdale	Engl. 76,	Langworthy Club
Rodig, Milton Theodore	El Cajon	E. E. 44,	633 Channing-p
Rogers, Alice Marie	Los Angeles	Engl. 27,	21 Roble
Rohrback, Daniel William	Watsonville	M. E. 72,	37 Encina
Root, William Thomas	Pasadena	Educ. gr.,	101 Encina
A. B., Stanford, 1912.			
[1]Rose, Phil Sheridan	Ashland, Ore.	Law 58,	531 Cowper-p
Rosenstern, Irma Emilie	Ocean Park	Span. †,	40 Roble
Ross, Donald Stamford	Pasadena	C. E. sp. 9,	Beta Theta Pi
Ross, George Paul	Lakeview, Ore.	Law 72,	33 Encina
Ross, James Madison	Manila, P. I.	PreL. 9,	Phi Gamma Delta
Ross, Stanley	Palo Alto	Geol. 25,	561 Middlefield-p
Roth, Earl Frederick	Willits	Phyl. 41,	38 Encina
Rouiller, Marcelle Henriette	Palo Alto	Frn. 46,	431 Channing-p

Rounds, Ralph Madison	Wichita, Kan.	Hist. 103, Phi Gamma Delta
Rowe, Herbert	Palo Alto	Chem. 71, 235 Emerson-p
Rowell, Isabel	San Jose	Educ. 72, 34 Roble
Rowlands, Florence Irene	Ogden, Utah	Hist. 13, Alpha Phi
Roxburgh, Eileen Margaret	Gilroy	Engl. 107, 54 Roble
[2]Roy, David G.	Campbell	PreL. sp., Campbell-c
Russell, Frank Marion	Pasadena	Hist. gr. Delta Chi
A. B., Stanford, 1912.		
Sanborn, Augustus Mudge	Redlands	M. E. gr., Phi Delta Theta
A. B., Stanford, 1913.		
[1]Sanborn, Morgan Allan	Benicia	Law 61, 92 Encina
Sandstorm, ArthurCharles	Portland, Ore.	C. E. sp. 66, 55 Encina
Sanford, Alice	Palo Alto	Phyl. 9, 450 Kingsley-p
[1]Sanford, Burnett	Palo Alto	Phys. 76, Phi Kappa Psi
Sanford, Carrie Isabel	San Francisco	Frn. 46, Delta Delta Delta
Sanger, George Norman	Lindsay	Phyl. 7, College Terrace
Sankey, Stella Belle	Clearfield, Pa.	Graph. sp. 130, 4 Cabrillo
Sawbridge, BenMenadue	N.Yakima, Wn.	PreL. 12, Phi Kappa Psi
Saylor, Evelyn Jane	Portland, Ore.	Engl. 43, Delta Delta Delta
Sayre, Marjorie A.	Tacoma, Wash.	Hist. 92, Alpha Omicron Pi
Schaaf, Clara Lydia	Ft. Wayne, Ind.	Germ. gr., 326 Lytton-p
A. B., Stanford, 1912.		
Schaub, Eugene	Logan, Utah	C. E. sp. 9, 225 Homer-p
Schaupp, Karl Ludwig	Santa Rosa	Phyl.-Med. 113, Encina
Scheele, Norbert	Palo Alto	Germ. gr., 909 University-p
A. B., Stanford, 1912.		
Schellbach, Genevieve	San Jose	Engl. 56, 508 S. 11th, SJ-sj
Schempp, ChristyAdolph	Taunton, Mass.	Chem. 13, 918 Ramona-p
Schilling, Henry Joseph	San Jose	C. E. 87, 536 S. 4th, SJ-sj
[2]Schlein, Walter Charles	Georgetown	Educ., 45 N. 2nd, SJ-sj
Schmidt, JustusJohn	E.LasVegas, N.M.	Econ. 68, Chi Psi
[2]Schnell, Eugene Andrew	Mayfield	Graph., 341 Columbia, M-m
Schnetzler, StanleyStolz	BeaverDam, Wis	Chem. 32, Phi Delta Theta
[1]Scholefield, Henry Arthur	Hollister	M. E., Alpha Tau Omega
Scholl, Albert John	Los Angeles	Chem.-Med. 108, Kappa Sig
Scholz, Herbert Joseph	Campbell	E. E. 48, 130 Encina
[2]Schriner, Mary Boone	Albia, Iowa	Lat. gr., Alvarado Hall
A. B., Iowa Wesleyan, 1891; A. M., 1894.		
[1]Schulz, Herbert R.	Los Angeles	C. E. 704 Bryant-p
Schuyler, Howard I.	New York, N. Y.	Educ. 108, 78 Encina
Scofield, Frank Alson	Dunnigan	Educ. 104, 120 Encina
Scott, Earl Theodore	Los Angeles	C. E. 90, 185 Encina

Scott, Walter Winthrop Willits Geol. 10, 38 Encina
Scull, Carolyn Beatrice Palo Alto Hist. gr., 250 Lowell
A. B., Stanford, 1911.
Sears, Harry Johnson Palo Alto Chem. gr., 635 Bryant-p
A. B., Stanford, 1911; A. M., 1912.
Seeley, Ruth Los Gatos Chem. 117, 63 Roble
Selleck,Marjorie Cornelia Lincoln,Neb. Germ. gr., Madrono
A. B., Nebraska, 1912.
[1]Sevier, Milton Williams Eureka Lat. 107, 4 Lasuen
Semple, George Hallion New York,N.Y. Geol. 39, 103 Encina
Seymour, Donald Irving Sacramento C. E. 44, Sigma Nu
Sharp, Edward William Chico C. E. 35, 81 Encina
Sharp, Sidney J. W. Hanford Law 70, 9 Encina
[1]Shaul, Gilbert Lafayette San Diego Law 53, Phi Delta Theta
Shaw, Carl Raymond Aspen, Colo. C. E. 71, 143 Encina
Shaw,Franklin Edward Lewiston,Ida. PreL. 41, Phi Gamma Delta
Shea, Timothy Thomas San Francisco Med. †53, 3753 17th, SF-sf
A. B., St. Mary's College, 1911.
Sheldon, Jeremiah William Gilroy Bot. 62, 57 Encina
Sheldon, Peryl Hazelle Parker, S. D. Engl. 92, Mariposa
Sheldon, Virgil Lee A. H. Berkeley PreL. 28, Chi Psi
Shelton, Leigh Claiborne Los Angeles Hist. 9, Pi Beta Phi
Shelton, Ruth Casner Los Angeles Hist. 50, Pi Beta Phi
Sheridan, Grace Santa Barbara Frn. 77, 660 Webster-p
[1]Sherman, Harold M. Los Angeles Law gr., Delta Chi
A. B., Stanford, 1912.
Shimodao, Saichi Hilo, T. H. M. E. 11, Japanese Club
Shook, Mary Louise Greencastle, Pa. Engl. gr., 84 Roble
A. B., Wilson College, 1906.
Show, Ruth Katherine Palo Alto Educ. 66, 353 Melville-p
Shriver, Harold Dexter Eureka, Utah E. E. 34, 81 Encina
Shuttleworth,VernisKaley IdahoFalls,Id. PreL. 8, 293 Central-p
Sick, Emil G. Lethbridge,Alberta,Can. PreL. 13, 4 Salvatierra
Sickler, Jack Miller Pasadena Geol. 34, Zeta Psi
Siefert, Alfred Camille Pasadena Med.gr., 2121Buchanan,SF-s
A. B., Stanford, 1911.
Siemon, Fred Ontario Geol. †1, 200 Encina
[1]Sim, Douglas Hamilton Cupertino Law 57, Sigma Alpha Epsil
Simon, Cecil Stocker Los Gatos M. E. 113, 172 Encina
[1]Simons, Ada Beatrice Fresno Graph. 119, 38 Roble
[1]Simons, Walter Walleman Butte, Mont. C. E. 18, 2 Lasuen
Simonson, Stanley Stoddard Merced Econ. 37, Delta Upsilon

Simpson, Ralph Townsend	Pasadena	Geol. 10,	Beta Theta Pi
[1]Sinclair, Brevard Davidson	Berkeley	PreL. sp. 37,	SigmaAlphaEp
Single, Forrest Edwin	Stockton	Law 69,	Zeta Psi
Sizer, Miriam	Palo Alto	Hist. 12,	959 Bryant-p
Sizer, Randolph Spelman	Palo Alto	Law 93,	959 Bryant-p
Skinner, John Kenneth	Los Angeles	Geol. 107,	Sigma Nu
Skolfield, William King	Portland, Ore.	E. E. 51,	145 Encina
Sloss, Louis, Jr.	San Francisco	M. E. 14,	168 Encina
Sloss, Mary Tamzen	San Jose	Econ. 42,	Pi Beta Phi
Slyfield, Emerson Upton	Los Angeles	Bot. 2,	Phi Kappa Psi
[2]Small, Irene Delta	Chico	Hist.,	62 Roble
Smiley, Frank Jason	Palo Alto	Bot. 102,	446 Hamilton-p
Smith, Callie Sutherland	La Crescenta	Hist. 74,	Delta Gamma
Smith, Chauncey	Elie, Man., Can.	C. E. 143,	Theta Delta Chi
Smith, Cordelia Madison	Venice	Graph. 98,	Gamma Phi Beta
Smith, Dorothea Louise	Campbell	Hist. 41,	68 Roble
Smith, Edgar Clarence	Azusa	Law 111,	141 Encina
Smith, Elmer William	Ferndale	Med. gr.,	1436 Calif., SF-sf
A. B., Stanford, 1912.			
Smith, Fred Clarence	Superior, Wis.	C. E. 39,	651 Waverley-p
Smith, Harry James	Ferndale	Med. gr.,	1436 Calif., SF-sf
A. B., Stanford, 1912.			
Smith, Jessie Edna	Redwood City	Frn. 8,	Redwood City-r
[2]Smith, Leslie Gaines	San Jose	Educ. †,	Alexandria A.SJ-sj
Smith, Mildred	Ferndale	Germ. 79,	48 Roble
Smith, Minnie B.	Olean, N. Y.	Lat. gr.,	Harker's School-p
A. B., Stanford, 1910.			
[1]Smith, Olive Mabel	Manette, Wash.	Chem. 69,	Alpha Phi
Smith, Paul Roscoe	Fowler	PreL. 8,	9 Salvatierra
[2]Smith, Stanford Geary	Santa Cruz	PreL.,	Kappa Sigma
Smith, Talmage Laughner	Irwin, Pa.	Law 62,	96 Encina
Smith, Warren Locke	Ferndale	Ent. gr.,	724 Bryant-p
A. B., Stanford, 1913.			
[2]Smithson, Frank E.	Ellensburg, Wn.	Econ. sp.,	Sigma Nu
Smoot, Emma	Beaumont	Frn. 26,	Alpha Phi
Smyth, Glen Miller	S. Lake City, Utah	Chem. 99,	Phi Gamma Delta
[1]Snell, Lester William	Raton, N. M.	Geol. 72,	43 Encina
Snyder, Gaylord K.	Los Angeles	E. E. 98,	Beta Theta Pi
Sontheimer, Urban Alexander	San Jose	Law gr.,	172 Encina
A. B., Stanford, 1912.			
[2]Soper, Harold Calhoun	Palo Alto	Geol. 27,	Phi Kappa Psi
Spalding, Philip Edmunds	Portland, Or.	C. E. 27,	Phi Delta Theta

Speer, James Beryl Missoula, Mont. Law gr., 25 Salvatierra
A. B., Montana, 1908.
Spellman, Thomas Joseph Colma C. E. 106, 13 Encina
Spence, Homer Roberts Alameda Law 100, Chi Psi
[2]Spencer, Laurence M. San Francisco Geol., Phi Kappa Psi
Squire, Caroline Elizabeth Palo Alto Germ. 77, 900 University-p
Stadler, Marie H. Helena, Mont. Chem. 50, Langworthy Club
Stafford, Kathleen San Jose Lat. 109, 26 Roble
Stalder, Sydney Gordon Riverside Econ. 23, Kappa Alpha
Stammer, Walter Henry San Jose Law 71, Delta Chi
Standish, Allan Morgan Palo Alto Econ. 77, Beta Theta Pi
Staniford, Warren Paul Fresno PreL. 9, Sigma Chi
[2]Stapleton, Leona E. Stanford Univ. Phyl. 39, 5 Lasuen
Stearn, Allen Edwin St. Louis, Mo. Chem. 16, 80 Encina
Stearns, Edna Adele Oakdale Hist. 74, Langworthy Club
Steele, Margaret Marion San Jose Math. 104, 258 High-p
[1]Stein, Allan Thurman Boise, Idaho Law 96, 176 Encina
Steinhart, Stanley Albert Santa Clara E. E. 36 Santa Clara-sc
Steiny, Homer J. Stockton Geol. 27, Zeta Psi
Stendel, Dorothy Esther Los Angeles Germ. 84, 49 Roble
Stephens, Harmon Bross Crete, Neb. Econ. 26, Cardinal Club
[1]Stephenson, Burroughs Agin Los Altos C. E. 130, Los Altos-l
A. B., Stanford, 1913.
[1]Stephenson, Orlando L., Jr. Los Altos Econ. 1, Los Altos-l
Stevens, LloydCroasmun Graceville, Minn PreL. 37, Phi Delta Theta
Stevens, Verne Genoa Palo Alto Ent. 101, 926 Cowper-p
Stevick, Anna Laura Palo Alto Engl. 104, 509 Hale-p
[2]Stevick, May Ellen Palo Alto Graph., 509 Hale-p
Stewart, Clarence Edward Stockton C. E. 47, Chi Psi
[1]Stewart, Everett Earle Brockton, Mass. Econ. 16, 840 Bryant
[2]Stewart, Florence Los Angeles Hist., 69 Roble
Stewart, Horace Vane Denver, Colo. PreL. 13, Sigma Chi
Stewart, Lloyd Lincoln Los Angeles Geol. †8, 18 Alvarado
Stewart, Robert Woodville San Jose PreL. 42, 547 S. 9th, SJ-sj
Stidston, Russell Osborne Palo Alto Engl. gr., 757 Homer-p
A. B., Stanford, 1911; A. M., 1912.
Stillman, Dorothy Maxson Stanf. Univ. Engl. 108, 2 Alvarado
[2]Stillson, Grace Elizabeth Palo Alto Hist. 54, 451 Ruthven-p
Stinchfield, Roxana J. College City Bot. 11, 840 Bryant-p
Stocklmeier, Louis Cupertino C. E. 13, Cupertino-c
Stolle, Francis Palo Alto Med. gr., 2440 Calif., SF-sf
A. B., Stanford, 1910.

Stone, Herbert Martinez Geol. sp. 105, 1229Webster-p
[2]Storke, Arthur David Auburn, N. Y. Geol. sp., 660 Waverley-p
Strickler, John Philip San Diego Phyl.-Med.106, KappaAlpha
Stuart, Archer Bell Palo Alto E. E. 45, 621 Gilman-p
Sullivan, Albert Patrick Hollister Phyl. 41, 153 Encina
Sullivan, Mary Canice Eureka, Utah Engl. 12, 87 Roble
Summerfield,Lester Douglas Reno,Nev. Law gr., 83 Encina
A. B., Stanford, 1912.
Supple, Albert James Alhambra Chem. 13, 199 Encina
Suzuki, Tomitoro Yamanashiken,Japan Phil. 106, 800 Cowper
Svenson, Arthur Edward Los Angeles Geol. 44, 39 Encina
Swabey, William Curtis Riverside, Ill. Phil. 41, 825 University-p
Swan, Guy Carleton Lawrence, Mass. Chem. 106, 68 Encina
Swanson, Charles Raymond Fresno C. E. 75, 136 Encina
Swayne, Lloyd Alameda M. E. 52, Kappa Sigma
Sweet, Lloyd Dudley Chinook, Mont. Econ. 106, 184 Encina
Swem, Harry Archie S. LakeCity,Utah Geol. 88, Sigma Chi
Swift, Faith A. Santa Cruz Zool. gr., 639 Gilman-p
A. B., Stanford, 1912.
Swing, Annie May San Bernardino Math. 77, 11 Roble
Swingle, Clarissa Winifred Long Beach Educ. 61, 22 Roble
Taff, Elizabeth Simonds Palo Alto Econ. 42, 628 Cowper-p
Taggart, Kathrine Los Angeles Lat. 86, Delta Gamma
Talbert, Wilford Ebenezer Highgrove Educ. 97, 424 High
Talboy, Della Irene Palo Alto Lat. 88, 311 Middlefield-p
[1]Talboy, William E. Palo Alto Hist. 129, 311 Middlefield-p
A. B., Stanford, 1913.
Tanner,William Roy Minneapolis,Minn. Educ. gr., 21 Salvatierra
A. B., Stanford, 1912.
Tateishi, Jizaemon Wakayamaken, Jap. Econ. 105, Japanese Club
[2]Taylor, Erna Gertrude Los Angeles Hist., Alvarado Hall
Taylor, George Harvey Selma C. E. 13, 54 Encina
[1]Taylor, Leroy Edwin Palo Alto Econ. 120, Acacia
A. B., Stanford, 1913.
[2]Taylor, Louis John Sacramento Geol. gr., Alpha Tau Omega
A. B., Stanford, 1912.
Templeton, Eugene C. Palo Alto Geol. gr., 375 Everett-p
A. B., Stanford, 1910; A. M., 1912.
Templeton, Ruric R. Palo Alto Geol. 29, 375 Everett-p
[2]Terry, Marcus Claude, Brighton, Ia. Bact. sp., 536 Middlefield-p
[1]Terry, Paul Fay Fruita, Colo. PreL., 235 Emerson-p
Terry, Zebulon A. Los Angeles Econ. 79, Delta Tau Delta

Test, Lawrence Cook	Pasadena	Graph. 41,	16 Salvatierra
Thalheimer, Walter	Phoenix, Ariz.	PreL. 46,	134 Encina
Thoburn, James Harold	Palo Alto	Econ. 50,	Phi Delta Theta
Thoburn, Wilbur William	Palo Alto	Econ. 37,	Phi Delta Theta
Thomas, Earl Charles	Portland, Ore.	C. E. 80,	53 Encina
[1]Thomas, James Carl	Las Vegas, Nev.	Law 125,	Delta Tau Delta
Thompson, Charlotte Seeber	Los Gatos	Lat. 44,	22 Roble
Thompson, Georgia Emily	San Diego	Med.gr.,	2121BuchananSF-sf
A. B., Stanford, 1911.			
Thompson, Hannah Trainer	Pasadena	Germ. 109,	36 Roble
Thompson, Jean	Highland	Zool. 13,	13 Madrono
Thompson,MildredHarriet	Buffalo,N.Y.	Educ. 86,	Langworthy Club
Thompson,Ralph Shultz	Sp.Coulee,Can.	PreL. 9,	415 Lytton-p
[1]Thompson, William A.	Wenatchee, Wn.	C. E. †3,	840 Bryant
Thompson, Wm. Francis	Everett,Wash.	Zool. gr.,	32 Encina
A. B., Stanford, 1911.			
Thorburn, Robert R.	Los Angeles	Chem. 48,	Chi Psi
Tiffany, Frank Gile	Hollister	Econ. 10,	195 Encina
Timmins, Claude Walter	Fresno	PreL. 10,	Sigma Chi
Tincher, Eugene Earl	Long Beach	Law 119,	Delta Chi
Tisdale, Marjorie Minnie	Redlands	PreL. 45,	Delta Gamma
Tittle, Ward Clark	San Francisco	Law unc. 106,	118 Encina
Tobin, Marie Gordon	St. Louis, Mo.	Hist. 39,	Kappa Kappa Gam
Todd, Katherine Frances	Oakland	Phil. 62,	Alvarado Hall
Todtmann, Harry George	Chicago, Ill.	C. E. 107,	82 Encina
Tognazzini, Irene Amanda	Cayucos	Phyl.-Med. 102,	50 Roble
Topham, James Scott	Washington,D.C.	C. E. sp. 109,	Acacia
[2]Townsend, Thomas Harold	San Jose	Geol.,	659 Miller, SJ-sj
Trace, Gertrude May	San Jose	Educ. 86,	730 Univ., SJ-sj
Traphagen, Dorothy	Altadena	Graph. †12,	Kappa Alpha T.
Trask, George Harlan	Los Angeles	C. E. 104,	95 Encina
Trent, Leonore Evelyn	Santa Monica	Engl. 47,	Alpha Phi
Tsuzuki, Mitsuji	Takasemachi, Japan	Econ. sp. 91,	Menlo Park
Tufts, John Marshall	San Francisco	Phyl. 8,	Phi Kappa Psi
Tulloch, Leslie S.	Kohala, H. T.	Zool. 75,	Mariposa Club
Tulloch, Martha	Kohala, H. T.	Hist. 87,	Mariposa Club
[1]Tully, Mabel Irene	San Jose	Educ. 25,	358 N. 7th, SJ-sj
Tully, Wilford Hamilton	San Jose	Law 57,	358 N. 7th, SJ-sj
Tupper, Charles Ralph	San Jose	C. E. 113,	211 S. 8th, SJ-sj
Turner,Madeleine MacCrea	San Fran.	Hist. 13,	Kappa Kappa Gam
Turner, Muriel Emily	Palo Alto	Math. 15,	Castilleja-p

Turpin, Charles Sawyer San Francisco Engl. 99, Delta Tau Delta
Tuttle, Ruth Claire Watsonville Germ. 85, Langworthy Club
Tuttle, Winnifred Mary Pacific Grove Chem. 30, 65 Roble
Twombly, Margaret Marie Palo Alto Phyl. gr., Mariposa Club
A. B., Stanford, 1912.
Tyler, Susan Clark San Diego Germ. 79, Mariposa Club
Uhls, Kenneth Benton Osawatomie,Ks. Econ. 1, Sigma Chi
Ulery, Lucile Bernice Los Angeles Engl. †7, Alpha Phi
Unangst, Edwin Walter SanLuisObispo Engl. 42, Encina
Urban, Joseph Charles Marysville Bot. 5, 126 Encina
[2]Usinger, Mabel Harriet Palo Alto Lat. gr., 415 Lytton-p
A. B., California, 1911.
Utley, Harry Meredith San Diego PreL. 33, 180 Encina
Vail, Arthur Jacob Palo Alto E. E. 51, 333 Channing-p
Vail, Helen Palo Alto Econ. 77, 56 Roble
Valentine, Jean Mae Los Angeles Engl. 81, Kappa Kappa Gam
Vanderburg, Chester Marion Madera Phyl. 77, Encina
Vandervort,CharlesThomas SantaCruz Math. 23, 34 Encina
[2]Vandervort, Lynnette Chicago, Ill. Psych. †, Kappa Kappa Gam
Van Etten, Ilza Katrine Palo Alto Hist. 51, 465 Hawthorne-p
[1]Van Etten, Percy Hixon Palo Alto C. E. gr., Coyote-c
A. B., Stanford, 1909.
Van Sicklen, Wm. John Castleton, Can. Chem. gr., 347 Ramona-p
A. B., Stanford, 1912; A. M., 1913.
Van Zwalenburg, Marian J. Riverside Hist. 45, Delta Delta Delta
[2]Vaughan, Marion Melinda Los Angeles Hist., Alvarado Hall
Vaughn, Romney Leigh San Francisco C. E. 100, 95 Encina
Vickery, Robert K. Saratoga Ent. sp. 14, Saratoga-s
[1]Vickery, Richard Lee Los Angeles Hist. 20, Kappa Sigma
Vigars, Ernest Powell Portland, Ore. C. E. sp. 10, 756 Bryant
[1]de Vilbiss, Lois Imelda San Francisco Hist. 20, Pi Beta Phi
Virmani, Devi Dyal Bahawalpore,India Chem. 148, 407 Waverley
Volkmor, Mary Hilda Whittier Math. 100, Mariposa Club
Von Geldern, Charles Ernest San Fran. Med.120, 1926Broadw.,SF-sf
A. B., Stanford, 1913.
[1]Vos, Julian New York, N. Y. Law sp. unc., 16 Salvatierra
[2]Vrang, Minnie Christine San Rafael Zool., Alvarado Hall
Vrang, Christion Madison Ruby,Alaska Geol. sp. 59, SigAlphaEpsil
[1]Wade, Gustav Naples E. E. sp. 150, 107 Encina
A. B., Stanford, 1913.
Waelty, Waldo Ralph Santa Clara Chem. 112, 4 Encina
Wagner, Herbert Hudson San Jose C. E. 79, 355 Reed, SJ-sj

Wagner, Vesta Marion — Ventura — Engl.106, KappaAlphaTheta
Wahrenberger, Helen — San Diego — Hist. 8, Pi Beta Phi
[1]Wakefield, Cecil Ray — Fresno — PreL. 8, 4 Salvatierra
Wales, Philip Gray — Menlo Park — Law gr., Menlo Park
A. B., George Washington University, 1883.
Walker, Leland Harrison — Los Gatos — Law gr., Los Gatos-l
A. B., Stanford, 1912.
Walker, Harold Nelson — Spokane,Wash. — E. E. 74, 319 Alma-p
[2]Wall, Helen Reiff — San Francisco — Germ., Alpha Phi
[2]Wall, Kathryn Reiff — San Francisco — Germ., Alpha Phi
Wallace, Helen — Visalia — Hist. 31, Kappa Kappa Gam
Wallach, Guss Valentine — Boonville — C. E. 98, 75 Encina
Walls, Eleanor Prescott — Los Angeles — Hist. 52, Delta Gamma
Walton, Lois Mae — Santa Barbara — Engl. 104, AlphaOmicronPi
Ward, Alma Jane — San Jose — Educ. 105, 5 Madrono
Ward, Butler Etter — San Diego — E. E. 80 Kappa Alpha
Ward, Martin Luther — San Diego — Law gr., 122 Encina
A. B., Stanford, 1912.
Ward, Newman — Portland,Ore. — Geol. 79, 167 Encina
[1]Ward, Paul Phillip — San Diego — Law 124, 122 Encina
Waring, Clarence Almon — Mayfield — Geol. gr., 224 Harvard M-m
A. B., Stanford, 1911.
Warlow, Chester H. — Fresno — Law gr., Sigma Chi
A. B., Stanford, 1911.
[1]Warren, Esther — Bakersfield — Phys. 38, Alpha Omicron Pi
[2]Warren, Marie — Bakersfield — Ent. †, Alpha Omicron Pi
Warren, William Halford — Glendora — M. E. 52, 145 Encina
Washburn, Henry Lord — San Jose — Bot. 52, 101 Encina
[1]Washburne, Dorothea — Pasadena — Engl. 47, KappaAlphaTheta
[1]Wason, Thomas Frederick — Santa Paula — C. E. 63, 81 Encina
Watanabe, Walter — San Francisco — Chem. sp. 91, Japanese Club
Waterhouse, Mills Nettleton — Saratoga — Psych. sp. 9, 627 Homer-p
Waters, Ernest Gilbert — San Francisco — C. E. 12, Pine Cottage
[1]Waters, Pearl Elizabeth — Santa Clara — Math. gr., 35 Roble
A. B., Stanford, 1912.
Watkins, Fred Bradshaw — Los Angeles — Chem. 71, 185 Encina
[1]Watkins, Lyle D. — Los Angeles — Math. 14, Pine Cottage
[1]Wattenberger, Jacob Ross — Palo Alto — C. E. 9, 667 Channing-p
Waud, Joyce Emily — Ventura — Bot. 75, Kappa Kappa Gam
Waugenheim, Mervyn Emil — Newman — Chem., 25 Encina
Weatherford,HaroldLorraine — Chicago,Ill — Phyl. 14, 4 Alvarado
[1]Weatherley, Mabel — Los Gatos — Math. 11, 84 Roble

Weaver, Eva Ray	Turlock	Germ. 106,	10 Roble
Weaver, William Irwin	Turlock	Chem. 102,	407 Waverley
Webb, Morgan Chofield	Merced	Engl. 9,	147 Emerson-p
Weedmark, George Ryan	Porterville	M. E. 29,	318 Emerson
Wegis, Antone Henry	Rosedale	Geol. 44,	154 Encina
Weiss, Rosa	San Francisco	Phyl. gr.,	61 Roble
B. S., California, 1910.			
[2]Welin, Albert Fabian	Berkeley	Med. gr.,	2032 Shattuck B-b
B. S., California, 1912.			
Wells, Agnes Booth	Oakland	Hist. 41,	Langworthy Club
Wells, Edwin Adams	San Diego	Law 65,	Phi Delta Theta
Wenk, Morris	Stockton	E. E. gr.,	25 Salvatierra
A. B., Stanford, 1912.			
Wenzel, Robert Nicolas	St. Louis, Mo.	Chem. 23,	52 Encina
West, Howard Frank	Los Angeles	Med. gr.,	2327 Sacra., SF-sf
A. B., Stanford, 1912.			
Westhold, Amanda	Quincy, Ill.	Math. gr.,	11 Alvarado
A. B., Illinois, 1903.			
Weston, Clinton Byron	Patterson	PreL. 49,	College Terrace
Wetmore, Clyde T.	Hollister	Med. gr.,	2327 Sacra., SF-sf
A. B., Stanford, 1913.			
Weyse, Alice Caroline	Los Angeles	Hist. gr.,	Alpha Omicron Pi
A. B., Stanford, 1913.			
[2]Weyse, Helene Auguste	Los Angeles	Graph.,	Alpha Omicron Pi
Wheeler, Elizabeth Mayo	San Jose	Hist. 86,	Madrono
[2]Wheeler, Francis Foss	Milwaukee, Wis.	PreL. †,	15 Salvatierra
Whelan, Eva Blanche	Los Angeles	Hist. gr.,	28 Madrono
A. B., Stanford, 1912.			
Whipple, Horton	Burlingame	C. E. 7,	Burlingame-b
Whipple, Stephen Knight, Jr.	Burlingame	C. E. 94,	Burlingame-b
Whitaker, Ralph Warren	Bakersfield	C. E. 107,	Delta Upsilon
*[1]White, Flora May	San Jose	Math. gr.,	26 Clay, SJ-sj
A. B., Mt. Holyoke, 1910.			
White, Fred Ferrel	Marion, Ill.	PreL. 11,	Cardinal Club
White, Hazel May	Burlingame	Chem. 43,	Delta Delta Delta
White, Herbert Eustice	Sacramento	Law gr.,	116 Encina
A. B., Stanford, 1911.			
White, Walter T.	Portland, Ore.	PreL. 46,	Pine Cottage
Whitney, Charles Willard	San Ardo	E. E. 42,	103 Encina
Whitted, J. Herbert	San Dimas	Geol. 13,	Phi Gamma Delta
[1]Whittemore, Elsie Louise	Alhambra	Germ. gr.,	334 Homer-p
A. B., Stanford, 1912; A. M., 1913.			

*Died, November 2, 1912.

Whitten, Lester Clark Spokane, Wash. PreL. 11, Delta Tau Delta
Wickersham, Newton W. Los Angeles Geol. 24, Kappa Sigma
Widell, Berndt Alexis Monterey E. E. 11, 22 Lasuen
Wilcox, Lorene San Francisco Engl., Alvarado Hall
[1]Wilcox, Philip Edmund San Jose C. E. †7, 567 S. 8th,SJ-sj
Wilcox, Robert W. Delta, Colo. Phyl.-Med. 104, 127 Encina
[2]Wilde, Frank L. Dobbs Ferry, N. Y. Geol. gr., Sigma Chi
A. B., Stanford, 1911.
Wiles, Coral Agnes Chico Engl. 100, 56 Roble
Will, Elsa Rochester, N. Y. Med. gr., 357 Kingsley-p
A. B., Stanford, 1913.
[1]Willard, Florence Pasadena Engl. 28, Alpha Phi
Willard, Frankie Calexico Ent. gr., Langworthy Club
A. B., Stanford, 1911.
Williams, Ben Charles Los Angeles C. E. 12, Alpha Tau Omega
Williams, Buford Vinita, Okla. Econ., 19 Lasuen
Williams, Carl Francis Los Angeles M. E. 36, 2 Lasuen
Williams, Edle Carolyn Gustine Graph. 75, 639 Gilman-p
[1]Williams, Florence Los Angeles Bot. gr., 334 Lincoln-p
A. B., Stanford, 1911; A. M., 1912.
Williams, Harry Kingsley Los Angeles C. E. 80, 115 Encina
[2]Williams, Hortense Portland, Ore. Chem., 13 Lausen
Williams, J. Harold Ainsworth, Neb. Educ. 75, 407 Waverley
Williams, Mary Wilhelmine Gustine Hist. gr., 639 Gilman-p
A. B., Stanford, 1907; A. M., 1908.
Willimann, Edwin Menlo Park Engl.sp.13, St.PatricksS.-mp
[2]Willis, Wade Clarendon, Tex. Law sp., 342 Homer-p
[2]Wilson, David H. Roseburg, Ore. M. E. 4 Salvatierra
Wilson, France Q. Abilene, Kans. Law †4, Delta Tau Delta
Wilson, George Osborne Saratoga E. E. 85, Saratoga
Wilson, Paul R. Bandon, Ore. PreL. sp. 8, Encina
Wilson, Weston Stephens Los Angeles Econ. 111, Zeta Psi
[2]Wines, Blaine Leslie Ruby Valley, Nev. PreL. 24, Sigma Alpha Eps
Wing, Sumner Paddock Palo Alto C. E. 83, 345 Lincoln-p
Wing, Winchester Paddock Palo Alto Bot. 6, 345 Lincoln-p
Winn, Vera Lutitia Palo Alto Grk. 51, 1102 Ramona-p
[2]Winslow, J. Russell Carthage, Ind. Chem. †, 4 Salvatierra
Wintler,ClarenceHenry Vancouver,Wn. E. E. 90, 10 Alvarado
[2]Wiseman, Alta Echo Pixley Phys. gr., Langworthy Club
A. B., Stanford, 1912.
Wishard, Alice Mary Mt. View Graph. gr., 3 Madrono
A. B., Stanford, 1912.

Wishard, Helen Louise	Mt. View	Engl. 104,	16 Madrono
Withey, Hettie Alice	Los Angeles	Hist. 104,	12 Alvarado
Wolcott, Clifton Ellsworth	Burlingame	Econ. 46,	25 Salvatierra
Wolcott, Herbert Betts	Carthage, Mo.	Econ. 71,	Sigma Chi
[1]Wolford, Edwin Byron	Oakland	E. E. sp. 31,	Sigma Nu
Wollaston, Charles Hyde	Santa Ana	C. E. 93,	7 Encina
Wolverton, Theron	Berkeley	C. E. 50,	161 Encina
Wong, Ralph Buckland	San Francisco	C. E. 25,	318 Emerson
Wood, Anna Margaret	Escondido	Hist. 26,	25 Madrono
Wood, Arthur Rollit	Saratoga	Econ. 36,	159 Encina
Wood, Dorothy Augusta	Palo Alto	Phyl. 69,	1757 Waverley-p
[1]Wood, Frederick Bertram	Palo Alto	Law gr.,	Acacia
A. B., Stanford, 1910; J. D., 1913.			
Wood, Granville Numan	Blue Lake	Law 108,	Phi Kappa Psi
Wood, Harry Reynolds	VanBuren,Ark.	Engl. 58,	Phi Kappa Psi
Wood, Jacqueline	Seattle, Wash.	Hist. 34,	Alpha Omicron Pi
Wood, James Vincent	Pacific Grove	Econ 13,	18 Alvarado
Wood, Jessie Ida	Mayfield	Bot. 41,	Mayfield-m
Wood, John Clarence	Santa Cruz	PreL. 10,	40 Encina
Wood, W. Welcome	Interior, S. D.	Med. 138,	2440 Calif.,SF-sf
B. S., Huron College, 1909.			
Woodhams, Clifton Henry	Redwood	M. E. 31,	542 Cowper-p
Woodworth, Arthur W.	Tonopah, Nev.	M. E. 7,	2 Lasuen
Woolley, James Earl	Santa Rosa	Law 120,	11 Encina
Workman, Thomas Edgar	Los Angeles	Geol. 43,	Beta Theta Pi
Wormser, Mary	San Diego	Hist. 102,	437 Kipling
Worth, Frederick Noyes	San Francisco	Econ. 11,	Cardinal Club
Worthington, Robert Strong	Alameda	C. E. 77,	185 Encina
Worthy, Arthur Edwin	Santa Ana	PreL. 50,	Encina
Worthy, Elmer Thomas	Santa Ana	Law 75,	23 Encina
Wright, Ardelle F.	Palo Alto	Bot. 32,	611 Waverley-p
Wright, Chester A.	Williamsburg,Ind.	Law sp.unc.16,	10Salvatierra
Wright, Ernest Neall, Jr.	Pasadena	Geol. 17,	Phi Gamma Delta
Wright, George Ireland	Pasadena	E.E.sp.96,	Phi Gamma Delta
[1]Wright, Garland White	Chico	Phyl.,	5 Lasuen
Wright, Howard Walter	Pasadena	PreL. 35,	Beta Theta Pi
Wyant, Carlton Levi	Montecito	C. E. 106,	117 Encina
Wyckoff, Harry Alphonso	Palo Alto	Med gr.,	342 Homer-p
A. B., Stanford, 1907.			
Wyman,EleanorMcKee	SanLuisObispo	Lat. 74,	Mariposa Club
Wynne, Arthur William	San Anselmo	Engl. 43,	129 Encina

Yager, John Edgar	Sacramento	M. E. 67,	262 Kingsley-p
Yamada, Sozaburo	Sendoi, Japan	Phyl. 36,	318 Lincoln
Yap, James Fook Onn	Honolulu, T. H.	C. E. †10,	318 Emerson
Yeary, Malcolm Leland	Los Angeles	Lat. gr.,	16 Salvatierra
A. B., Stanford, 1912.			
Yim, Bing Jue	Canton, China	Chem. †7,	318 Emerson
[1]Yoch, Agnes Cecilia	Santa Ana	Span. 121,	Alvarado Hall
A. B., Stanford, 1913.			
Yoder, Olive Lillian	Los Angeles	Hist. 14,	Delta Delta Delta
Yokozeki, Hirosaburo	Kagawa, Japan	Econ. 104,	27 Salvatierra
[1]Yost, George Herbert	Palo Alto	Engl. gr.,	260 Churchill-p
A. B., Stanford, 1900.			
Young, Alfred Turner	Fort Jones	Econ. 8,	Theta Delta Chi
Young, Frank Herbert	Fort Jones	Econ. 111,	Theta Delta Chi
Young, Mary Frances	Hollywood	Germ. 11,	32 Roble
Young, Stanley Colin	San Jose	Law 121,	76 Encina
Ziser, George J.	Los Angeles	Chem. 47,	38 Encina
Zvenigorodsky, Abraham	NewYork, N.Y.	PreL. 8,	College Terrace

Special Workers

[2]Knapp, Edwin V.	San Francisco	Path.,	St.Luke'sHosp.,SF-sf
M. D., Cooper Medical College, 1897.			
[2]Miner, W. D.	San Francisco	Med.,	Sac.&Webster, SF-sf
M. D., Northwestern, 1903.			
[2]McGinn, Arthur F.	Providence, R. I.	Med.,	Sac.&Webster, SF-sf
M. D., College of Physicians and Surgeons, 1895.			
[2]Patterson, W. A.	San Francisco	Med.,	Sacr.&Webster, SF-sf
M. D., Cooper Medical College, 1893.			

SUMMER SESSION, 1912

Field Geology

Ambrose, Arthur Warren
Anderson, Robert Edwin
Andreen, Harry Mayo
Beal, Carl Hugh
Beckwith, Henry Truman
Branner, George Casper
Burrell, Logan
Cooper, Warren Gosselin
Crandall, Hector
Decius, Louis Courtney
Dietrich, Waldemar Fen
Erb, Benjamin Edward
Fyfe, Andrew Douglas
Gehrmann, William Conrad
Hall, Mortimer Louis
Hammon, Wendell C.
Jenkins, Olaf Pitt
Lantz, Grover Berner

Lasky, Bernard Harold
McCann, Robert James
Nobs, Walter Rudolph
Parmalee, Harvey Wright
Peake, Alonzo William
Remington, Arthur E.
Stewart, Edwin John

Marine Biological Laboratory

1. *Occupying Investigators' Rooms*

Gee, Wilson Parham, Fellow in Zoology,
University of California

Kroeck, Louis Samuel, Professor of Biology,
College of the Pacific

Loshinski, John N., Assistant in Zoology,
University of California

Stechow, Dr. Eberhard, Assistant in Zoological Museum,
University of Munich

Thompson, William Francis, Assistant in Zoology.

2. *Taking Regular Courses*

Bardin, Ethel Ora
Barry, George Long
Brown, Claude Everett
Cochran, Harrington W.
(University of California)
Cox, H. Ben
Crosby, Clara
Davis, Ida Ellen
Dunlop, Florence Edetha
Durgin, Eva Lillian
Durgin, Rubie Mae
Ellis, Lona Evelyn
Fisk, Mary
Gilchrist, Margaret Josephine
Girdner, Margaret Virinda
Hayes, Casey Hewitt
Hempl, Hilda
Jones, Robert Alton
Lewis, Edna Branham
Newcomer, Mabel
Sharp, Sidney Joseph Winter
Shea, Timothy Thomas
Smiley, Frank Jason
Tuttle, Winnifred Mary
Weaver, William Irwin
Williams, J. Harold

SUMMARIES

Officers

Trustees		15
Business Administration		18— 33
Academic Council—rank of		
Emeritus Professor	1	
Professor	60	
Associate Professor	26	
Assistant Professor	28—	115
Other Teaching and Administrative Officers—rank of		
Emeritus Professor	2	
Clinical Professor	7	
Associate Professor	3	
Assistant Professor	15	
Lecturer	2	
Teaching Instructor	45	
Non-Teaching Instructor	12—	86
Departmental Assistants:		
Teaching Assistants	121	
Administrative Assistants	49—	170
		404

Students

Graduates		
Accepted Candidates for Degree of A. M.	80	
Accepted Candidates for Degree of Engineer	11	
Accepted Candidates for Degree of J. D.	36	
Accepted Candidates for Degree of M. D.	30	
Accepted Candidates for Degree of Ph. D.	21	
Other Graduate Students	31—	209
Undergraduates		1491
Special Students		92
Total		1792
Summer Registration	55	
Less names already counted	44—	11
Total (including Summer Registration)		1803
Special Workers in Anatomy		4

By Major Subjects

	GRADUATE	UNDER-GRAD.	SPECIAL	TOTAL
Greek	3	8	—	11
Latin	13	23	—	36
Germanic Languages	11	56	—	67
Romanic Languages	2	31	1	34
English	18	121	7	146
Psychology	—	4	1	5
Philosophy	—	7	—	7
Education	12	54	1	67
History	12	173	2	187
Economics	10	143	9	162
Law	36	95	16	147
Pre-Legal Course	—	146	5	151
Graphic Art	1	43	2	46
Mathematics	4	28	1	33
Applied Mathematics	—	1	—	1
Physics	4	6	1	11
Chemistry	12	70	3	85
Botany	2	29	—	31
Physiology and Histology	4	63	1	68
Anatomy	—	—	—	—
Bacteriology	1	—	1	2
Zoology	5	10	—	15
Entomology	4	11	3	18
Geology and Mining	10	88	7	105
Civil Engineering	7	142	11	160
Mechanical Engineering	5	61	11	77
Electrical Engineering	3	71	8	82
Medicine	30	†22	1	53

By Residence, for the year

California	1,325
Other states	420
Foreign countries	47
Total	1,792

†Also registered as Physiology Majors, 13; as Chemistry Majors, 2.

ALUMNI ASSOCIATION

[Organized June 15, 1892]

CONSTITUTION

(As amended May, 1908)

In order to promote the interests of the University, to secure unity among its graduates, and to foster an attachment to our *Alma Mater*, we do hereby constitute ourselves an association to be known as the Alumni Association of the Leland Stanford Junior University.

I. MEMBERSHIP

1. All persons who have received a degree from the Leland Stanford Junior University are members of this Association.

2. All members of the Faculty are honorary members of this Association.

II. OFFICERS

1. The officers of this Association shall be: (1) a President; (2) one Vice-President for each successive group of five classes (provided that when the last group shall number three classes it shall thereafter be entitled to a Vice-President); (3) a Secretary-Treasurer; (4) an Executive Committee consisting of the Secretary-Treasurer and four other elected members, one of whom shall be designated as Chairman, but the President shall not be a member of the Committee; and (5) an Advisory Board, consisting of the President, one representative elected by the graduating class for the term of one year, and nine elected members who shall be graduates of five years' standing, and who shall be elected for three-year terms. . . . The Advisory Board shall elect its President and Secretary.

2. All other officers shall serve for one year or until their successors are elected.

III. DUTIES OF OFFICERS

1. It shall be the duty of the President to preside at all business meetings of the Association, to deliver the President's address on Alumni Day, and to perform such other duties as usually belong to his office.

2. It shall be the duty of the Vice-Presidents, in the order of seniority of their groups, to preside in the absence of the President and to perform the other duties belonging to his office.

3. It shall be the duty of the Secretary-Treasurer to keep accurate minutes of the meetings of the Association and to act as Secretary of the Executive Committee, of which he shall be a member.

4. It shall also be the duty of the Secretary-Treasurer to have charge of the collection and disbursement of the funds of the Association.

5. The Secretary-Treasurer shall be allowed ten per cent of all dues or assessments collected, as compensation for his services.

6. It shall be the duty of the Executive Committee to arrange for the program to be presented on Alumni Day; or any program for other public occasions; to regulate the finances of the Association; to perform such other duties as may be imposed upon it; and to attend to all business of the Association not otherwise provided for.

7. It shall be the duty of the Advisory Board, when deemed advisable, to consult alumni, undergraduates, faculty, and trustees, and to make recommendations regarding the welfare of the University and of the Alumni Association.

IV. COMMITTEES

1. The President shall be ex-officio a member of all Committees, except the Executive Committee.

2. At each annual business meeting the President shall appoint a committee of two persons to audit the Treasurer's accounts.

V. ELECTIONS

1. The February issue of the *Alumnus* shall give notice of the annual nomination and election of officers of this Association. Said notice shall contain the names of the incumbent officers and shall indicate the hold-over members of the Advisory Board, and shall contain in full the provisions of this Constitution relating to nominations and elections.

2. Nominations in writing, signed by at least twenty members, shall be required for any nomination. Nominations shall be forwarded to the Secretary-Treasurer between the first day of February and the first day of April of each year. On or before the fifteenth day of April of each year, the Secretary-Treasurer shall mail to every member of this Association, whose address he knows, an official ballot containing all the nominations, with the addresses of the nominees and the number of proposers of each, and said ballot shall be published in the May issue of the *Alumnus*.

3. Officers shall be elected at an annual election to be held at Stanford University on Alumni Day, between the hours of nine o'clock A. M., and twelve o'clock noon. The Executive Committee shall have

charge of the election. The elector may cast a written ballot in person, or by mail addresed to the Secretary-Treasurer, marked "Ballot" and disclosing the sender's name, and enclosing a ballot in a plain envelope. Ballots so received shall be opened and cast only during the hours of election. The respective candidates receiving the highest number of votes shall be declared elected. A tie vote shall be decided by lot.

4. No one whose annual dues are in arrears for the current year shall be entitled to vote or to hold office.

VI. DUES

The dues of the Association shall be $1.25 per year for each member thereof, which amount shall include a subscription to the *Alumnus*.

Provided, however, that all members who, prior to May 1908, have paid $5.00 shall be exempted from further dues.

VII. MEETINGS

Meetings of the Association may be called by the President or by petition of twenty members, said meetings to be held at Stanford University.

VIII. AMENDMENTS

Any proposition to alter or amend these Articles of Association must be proposed in writing, signed by twenty members, and submitted to the members by mail in printed form by the Secretary-Treasurer, and voted upon in the same manner as are nominations for officers, and adopted by a majority vote.

OFFICERS OF THE ASSOCIATION, 1912-13

President—LOUIS SAMUEL BEEDY, '98.

Vice-Presidents—CLELIA DUEL MOSHER, '93; ANNA GRAEME FRASER, '00; MARY HURLBURT SMITH, '02; ALMON EDWARD ROTH, '09.

Secretary-Treasurer—JOHN EZRA MCDOWELL, '00.

Executive Committee—HARRY BADGER REYNOLDS, '96, Chairman; JOHN THOMAS NOURSE, JR., '00; EARL HARRIMAN PIER, '07; DAVID HENRY WALKER, '10; JOHN EZRA MCDOWELL, '00.

Advisory Board—LOUIS SAMUEL BEEDY, '98 (ex-officio); CYRIL RAYMOND NUNAN, class of 1912; EVELYN WIGHT ALLAN, '96; NEWTON CLEAVELAND, '99; THOMAS MARION WILLIAMS, '97; MICAJAH ANDERSON THOMAS, JR., '04; WILLIAM WESLEY GUTH, '95; MARY LOCKEY, '02; FRED LESLIE BERRY, '99; LELAND CUTLER, '06; BENJAMIN FRANKLIN BLEDSOE, '96.

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